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From the Editor
Tara S. Behrend

I'm about halfway through my term as editor of *TIP*, and prompted by President Oswald's thankfulness-oriented column in this issue, I too took some time to reflect on how things have gone so far and what I'd like to see improve in the second half.

My goals upon taking the helm were to make *TIP* both more readable, from a technological perspective, and more widely read, from a content perspective. The technological progress has been mixed; we're adding new features on a continual basis to make *TIP* more usable but we still have more to do. Your requests and suggestions on that front are most welcome. In contrast, it has been an easy task to share high-quality articles with readers, thanks to the efforts of a large and diverse set of contributors and reviewers.

I'm enormously proud of the thoughtful, informative, and compelling articles that have appeared in the last six issues. This issue continues that trend, with feature articles that challenge popular stereotypes about generational differences, from **Cort Rudolph** and **Hannes Zacher**; a comprehensive overview of diversity and inclusion best practices from **Gabriela Burlacu**, **Bernardo Ferdman**, **Aarti Shyamsunder**, **Alice Eagly**, **Lisa Kepinski**, and **Julie Nugent**; an exploration of the 2016 presidential debates from an I-O psychology perspective, from **Mahtab Farid** and **Kevin Nolan**; and a clever text-analytic exploration of the scientist-practitioner gap from **Sy Islam**, **Michael Chetta**, **Andrew Martins**, **Darla van Govan**, **Andrzej Kozikowski**, and **Julia Needhammer**. Further, the Education and Training Committee, led by **Jennifer Gibson**, **Joseph Allen**, **Stephanie Payne**, and **Tim Huelsman**, has contributed a valuable resource for curriculum review and revision, and the Institutional Research Committee has conducted a thorough and provocative analysis of the gender wage gap in I-O psychology.

On top of these features, the editorial columns continue to be a highlight of *TIP*. The columns are a must-read if you need to (among other things):

- Stay up-to-date on employment law
- Develop an app for the first time
- Survive the tenure track
- Learn about the world of L&D
- Apply I-O to civil society organizations
- Choose a textbook
- Find out how to become a SIOP Fellow
- Discover how SIOP is engaged with federal policy
- Succeed as an international student

As is plainly evident, all SIOP members can benefit from reading *TIP*. Instead of bemoaning the divisions between members, reading the work in this publication will help us identify commonalities and opportunities for collaboration. I imagine this will be a welcome direction for all of us who are exhausted from the past year's broader societal, political, and cultural tumultuousness.

As we kick off 2018, I hope to continue this progress and keep moving forward. I wish you all the best for a happy and healthy year ahead.

The President's Message

Fred Oswald

This message is being written just after the US Thanksgiving—and we should thank the incredible talent that SIOP is fortunate to possess as we work together to move our society and profession forward. If my vision of Team SIOP is anything, it is *you*—individually and collectively influencing our impact and our identity as a profession. Let me elaborate on that as I update you on a few things; and then I'd like to use this message to speak to a couple of larger issues (among many) facing SIOP that are both exciting and challenging.

First, the 13th Annual Leading Edge Consortium “Innovations in Executive Coaching: Deepening your Expertise in a Dynamic World” was held October 20-21 at the Minneapolis Hilton and was a real success by all personal accounts and objective metrics (very high attendance and very good ratings). For me, it was a real honor and privilege to present the plaque for the [HRM Impact Award](#) to **Maggie Collins** and **Meredith Vey**, representatives of CVS Health. Their project streamlined the hiring process for Caremark, their pharmacy call center, ultimately improving outcomes that most of us can relate to: reduced hold times and fewer call transfers and callbacks. Considering that their call center takes nearly 30 million calls a year nationwide, that's a real impact! Take a look at their summary and video of their award-winning project on the HRM Impact [winners' page](#).

Regarding LEC overall, there are too many people to thank for making the consortium a success, but first and foremost, let me recognize the LEC committee for their tireless efforts before, during—and even after—this event: **Sandra Davis** (chair), **Erica Desrosiers**, **Michael Frisch**, **Tim Jackson**, **Rob Kaiser**, **Jeff McHenry**, and **Vicki Vandaveer**. We are already gearing up for an exciting LEC 2018 Consortium, with the topic of “High Potential Talent” chaired by **Allan Church** and **Rob Silzer**. Stay tuned for more information on this front.

Second, it is important to let you know that the SIOP Executive Board approved the addition of new committees to its structure. Based on an approved proposal by **Will Shepherd** (Professional Practice Committee) and **Rob Silzer** (Professional Practice Officer), the Professional Practice Committee has become three standing committees instead of one: Learning Resources for Practitioners, Career and Professional Development, and Engagement and Communications. These three committees reflect the nature and structure of important and intensive practitioner engagement that is already ongoing. Also, several committees were converted from ad hoc to standing committees: Licensing, Certification & Credentialing Committee (LCC); Government Relations Advocacy Team (GREAT); External Relations; and Advocacy Review Committee (ARC, which reviews GREAT).

Third, sure as the new year hits us every January, SIOP also experiences a changing of the guard in terms of our APA Council Representatives who serve on the SIOP Executive Board. We say goodbye and thanks in recognizing **Deirdre Knapp** for her many years of service. SIOP has counted on Deirdre for understanding the depths (sometimes painful) of APA governance and

for recognizing and responding to critical APA issues relevant to SIOP and its members (e.g., issues around testing, licensure, ethics, personnel selection, and other substantive areas that I-O psychologists can—and should continue to—monitor and provide their input and expertise to APA). At the same time that we acknowledge Deirdre's departure, we are fortunate to have Jeff McHenry as our new APA representative. Jeff has already been highly engaged in numerous conversations with our current APA representatives and with folks across the spectrum of SIOP to get the ball rolling. Welcome, Jeff!

Fourth but not least! The [SIOP 2018 Conference](#) in Chicago coming up before you know it (April 19-21, 2018), where we a very exciting lineup of events and activities is well in the works. Thanks to **Tracy Rizzuto** and her Theme Track committee for making my Team SIOP theme come to life at the conference in its many forms. Let me also express my grateful appreciation the SIOP Conference and Program Committee members, led by **Tracy Kantrowitz**, **Daisy Chang**, and **Eden King**, a very committed group that has have kept a very complex array of conference details going simultaneously while keeping the big picture in mind as well. In strong support of their efforts, the SIOP Administrative Office has worked tireless days (and nights) to iron out the kinks in our new software system and otherwise to support all aspects of planning the conference. Without the talents and efforts of all these folks working together, the SIOP conference would have no submissions or reviewers, no program, and no hotel or venue...that'd be pretty dismal, eh? Instead, SIOP 2018 promises to be a roaring success, and I look forward to seeing you (yes, you!) there. Historically, hotel rooms fill up quickly—so be the early bird, get this on your calendar, and reserve your hotel room in the Windy City today.

Fifth, the SIOP elections were just held in November, where truly without exception, SIOP was fortunate to have slates of exceptional candidates who were willing to run for office. Let's welcome SIOP our incoming officers: President Elect Eden King; Financial Officer/Secretary **Evan Sinar**; Membership Services Officer Allan Church; and Publications Officer **Mo Wang**. At the executive board meeting following the SIOP 2018 conference, these officers will join **Talya Bauer**, our incoming SIOP president. The bottom line of this update is a heartening one: SIOP remains in exceptionally talented and capable hands.

Sixth, the SIOP Publications Board will ring in the new year with **Ron Landis** as the incoming editor of *Industrial and Organizational Psychology: Perspectives on Science and Practice*, working with current editor **John Scott** in January, then officially taking over in April 2018. I mention this not only to recognize and congratulate Ron but to reflect on what a success *IOP* has been in the hands of John Scott as he completes his term as editor. As a peer-reviewed “conversation” (with its focal articles and series of commentaries in reply), *IOP* is more conversational and participative than traditional academic journals, and it impacts an important researcher and practitioner audience that traditional journals do not. Ron continues in this tradition yet plans to innovate with the journal (e.g., videos, cross-disciplinary papers) in what has become a real benefit to SIOP members.

As promised, let me now briefly turn to a couple of larger issues for consideration, ones that pertain to the Team SIOP vision that I'll reflect on in further detail in my closing *T/P* article in April and in my president's address at the SIOP 2018 conference.

The first issue is that of our changing profession and membership within SIOP. What does it mean to be an I-O psychologist these days, and what will it be like in the future? For example, there is steady growth in terminal master's I-O programs, which outputs a large number of I-O practitioners; there is growth in PhD programs in organizational behavior (OB) that produce academic researchers almost exclusively; and in between these, there are PhD programs in I-O psychology that produce both academics and practitioners. Even this oversimplified "three body" problem makes it impossible to predict our own future (for an analogy in physics, see <https://goo.gl/dN1Tau>), and reality is even messier. But nonetheless, we must continue to influence our destiny and maintain our profession as a "science for a smarter workplace." For instance, our education and training efforts are currently and vigorously embracing open science and the Robust and Reliable Research (RRR) task for initiative headed by **Steven Rogelberg** and enacted through partnering with **Joe Allen** as chair of the SIOP Education and Training committee, **James Grand** in chairing the Scientific Affairs Committee, and William Shepherd as chair of the Professional Practice Committee. As one immediate change, we have made meaningful improvements to our SIOP conference reviewing guidelines; and together, we are reaching out to the Consortium for the Advancement of Research Methods and Analysis (CARMA), headed by **Larry Williams**, for the collective advice and expertise of his group in improving our research practices, regardless of where they take place in academic or applied environments.

The second issue pertains to the substantive areas in which we work. In my last *T/P* article, I had mentioned how the SIOP Government Relations Advocacy Team (GREAT, chaired by the amazingly dedicated **Jill Bradley-Geist**) was focusing on five substantive areas that align and bring together I-O psychologists and federally relevant areas that are priorities regardless of political leanings: national security, health and safety, technological workforce, national defense, and veterans affairs. This has turned out to be an excellent strategy for allowing SIOP to act more effectively as experts in response to federal priorities in these domains. It also has inspired me to collaborate further with the SIOP Administrative Office to structure our messaging better around substantive content (the five aforementioned areas as well as others), whether that comes through the structure of our website, social media, or other electronic media. SIOP has purchased a new content management system (CMS) that will help make this happen, in addition to additional functionality in improving SIOP's website.

Again, more to follow on these two fronts facing SIOP. I-O psychology lives in exciting times, and I always appreciate hearing more of your stories (foswald@rice.edu)! Thanks to all of you for creating and *being* the value to SIOP. Happy holidays to all, with safe travels!

The Bridge: Connecting Science and Practice

Column Editors: Mark L. Poteet, Organizational Research & Solutions, Inc., and Lynda Zugec, The Workforce Consultants

“The Bridge: Connecting Science and Practice” is a *TIP* column that seeks to help facilitate additional learning and knowledge transfer in order to encourage sound, evidence-based practice. It can provide academics with an opportunity to discuss the potential and/or realized practical implications of their research as well as learn about cutting edge practice issues or questions that could inform new research programs or studies. For practitioners, it provides opportunities to learn about the latest research findings that could prompt new techniques, solutions, or services that would benefit the external client community. It also provides practitioners with an opportunity to highlight key practice issues, challenges, trends, and so forth that may benefit from additional research. In this issue, we explore the HEXACO model of personality!

The HEXACO: Improving the Usefulness of Personality Within Organizations



Matthew J. Mol and Sylvia Luu
AOE Science

and

J. Craig Wallace
University of Denver & AOE Science

In this article, we make a case for the value of the HEXACO model of personality. We start with a brief overview of the history of personality, beginning with the origin of the Big Five, through today. We then emphasize what sets the HEXACO apart from the Big Five. Next, we discuss why these differences make the HEXACO promising for use in the workplace. We briefly summarize some of the research the authors are engaged in on the usefulness of the Honesty-Humility factor before discussing some future directions.

A Brief History of Personality in the Workplace

The five-factor model of personality was originally discovered in the 1960s as the result of the culmination of the lexical hypothesis applied to the English language (Tupes & Christal, 1961). Shortly thereafter, interest in personality research was put on hiatus as the field wrestled with the work of Mischel (1968), emphasizing the importance of the situation, as opposed to the power of the individual in determining behavior. The “Big Five” came into being in the 1980s (Goldberg, 1981; comprising Extraversion, Emotional Stability, Agreeableness, Conscientiousness, and Openness). Around the same time, there was a resurgence in personality testing, presumably due to the general acceptance of the Big Five framework among test developers (Gibby & Zickar, 2008). The 1990s saw a series of meta-analyses (Barrick & Mount, 1991; Tett, Jackson, & Rothstein, 1991; Tett, Jackson, Rothstein, & Reddon, 1999) quantitatively summarizing the effectiveness of personality in predicting job performance. However, the rise of globalization, and the consequent focus on cross-cultural research, led to a new personality model: the HEXACO (Lee & Ashton, 2004). In the early 2000s, researchers applied the lexical hypothesis across multiple

languages and discovered/developed the HEXACO model (Ashton et al., 2004). The HEXACO model is composed of six factors: Honesty-Humility, Emotional Control, Extraversion, Agreeableness, Conscientiousness, and Openness. Today, personality testing is used in organizations for a variety of reasons, including employee selection, leadership development/coaching, teambuilding, and as a means to improve the effectiveness of a host of other organizational initiatives. However, many organizations use the Big Five and, consequently, miss out on some of the benefits of the HEXACO model.

The HEXACO and the H-factor

The factors of Conscientiousness, Extraversion, and Openness to Experience are relatively similar across both the Big Five and HEXACO models. The HEXACO model most notably differs from the Big Five through its inclusion of a sixth^h factor, Honesty-Humility (AKA the H-factor). This higher order H-factor borrows some of the variance associated with Agreeableness and Emotional Stability in the Big Five model, which purifies and narrows those two factors in the HEXACO model. Through this purification and added specificity, the HEXACO model offers an improvement in predictive ability over the Big Five. For example, take the role of a debt collector, who may need to be high on the H-factor in order to push for what is fair (the repayment of debts) but low on Agreeableness to demand that people pay their debts. The HEXACO model allows for this specification; however, in the Big Five, both of those behaviors would fall at opposite ends of Agreeableness, effectively washing out the predictive ability of Agreeableness for this role.

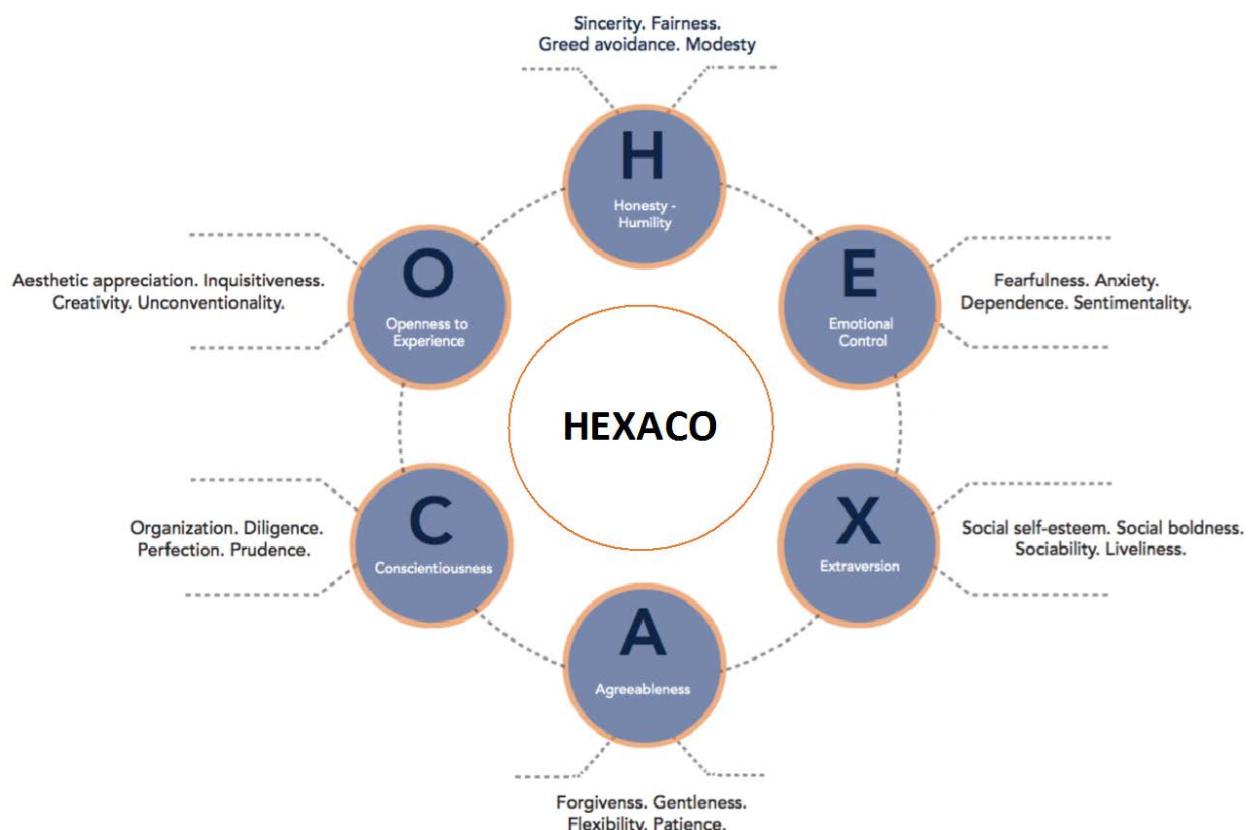


Figure 1. Dimensions and subdimension of HEXACO; © AOE Science, reprinted with permission

In addition to the benefits of purification and specificity, the six-factor HEXACO model has now been replicated across at least 12 languages and has been found to be more generalizable across cultures, compared to the Big Five model. This may not have been something worth considering 50 years ago, but as technology continues to make the world smaller, it makes sense to use a personality structure that holds true for people across the globe. Though the HEXACO model offers many advantages over the Big Five, we focus specifically on the H-factor and its potential implications for the workplace (for a thorough review of the HEXACO model, see Ashton & Lee, 2007).

The H-factor is composed of four subfacets: fairness, sincerity, modesty, and greed avoidance. Those high on the H-factor acknowledge strengths and weakness in themselves and others, actively look for feedback on how to further develop themselves, and are sincere, loyal team members. Colloquially speaking, people high on the H-factor are generally viewed as “just good people.” That’s not to say that being high on the H-factor is *always* a good thing. In some situations, a certain degree of self-interest, deception, or even boastfulness is necessary in order to perform appropriately. For instance, it wouldn’t be much fun (albeit easy) to play poker with somebody high on the H-factor or have someone high on the H-factor involved in trade negotiations.

The Utility of the H-factor in the Workplace

Given the prosocial and honesty aspects of the H-factor, one can postulate what its relationship would be with various organizational criteria. For instance, the H-factor is (perhaps unsurprisingly) negatively related to undesirable workplace behaviors, such as CWBs (Hilbig & Zettler, 2009; Marcus, Lee, & Ashton, 2007). People who are greed avoidant tend not to be the ones who steal from their employers. It may seem logical to assume that because the H-factor is negatively related to undesirable workplace behaviors, it would be positively related to desirable workplace behaviors, such as OCBs and job performance. That being said, however, these relationships are relatively understudied. Despite this, there are a few conceptual reasons to expect, on average, a positive relationship between the H-factor and performance, across most jobs.

Honest self-appraisal. The H-factor is not limited to the individual’s interactions with others but also extends to their own internal cognitive processes. People high on the H-factor tend to have more honest self-appraisals of their strengths and weaknesses. Their desire to have an accurate appraisal of who they are and what they are good at allows them to more accurately allocate their time and resources, making them better performers. They maintain the accuracy of their self-appraisal by valuing information and feedback about themselves. They are less likely to dismiss information that does not validate their self-concept so as to maintain an accurate self-appraisal. If they have an honest view of who they are, and it doesn’t agree with them, they are more likely to remedy their weaknesses through self-development. An employee who actively develops his or her self should be a higher performer, especially in dynamic settings that require consistent change.

Honest other appraisal. In the same way that high H-factor individuals have more honest self-appraisals, they also tend to have honest other appraisals. These high H individuals are more honest with their appraisals of others’ strengths and weaknesses, which can afford others some of the same benefits that an honest self-appraisal does. Having somebody in the office to keep everybody grounded helps everyone in the office to know themselves and helps them to allocate their time, resources, and developmental goals more accurately. It also helps to have somebody in the office who “tells it like it is,” so that when people are off task or performing a task in a less than optimal manner, they are informed that their behavior is not in the organization’s best interest.

Social tendencies. Research has tied the H-factor to a series of traits such as improved adjustment (Shu, McAbee, & Ayman, 2017) and cooperation (Hilbig, Zettler, Leist, & Heydash, 2013), as well as decreased aggression and revenge (Lee & Ashton, 2014). People who are high on the H-factor generally get along with others. As most organizations constitute social settings, it stands to reason that high H-factor individuals would be more adept at navigating the workplace, especially in team settings.

Job specific characteristics. So far, all of these reasons suggest the H-factor should predict job performance for almost all jobs (maybe even all jobs, at risk of sounding presumptuous). However, when using personality as a selection tool, it is conventional to use a job analysis to specify linkages between personality traits and certain aspects of the work that vary by the job. One such job that might be particularly well-suited for somebody high on the H-factor would be police officer. Individuals high on the fairness subfacet are less subject to corruption. Being high on the modesty subfacet may improve relations with civilians, making the officer more effective. There are also jobs where being low on the H-factor could be useful. For example, keeping with the industry of justice, defense lawyers high on the H-factor may be particularly poorly suited for the job. High levels on the sincerity subfacet may mean they are unwilling to manipulate the jury into believing their clients' innocence. Furthermore, the fairness subfacet may lead them to want to see their client punished if they believe their client to be guilty, which might impact their defense.

Current Research on the Utility of the H-factor

The authors have gathered data from three different organizations to examine both the criterion validity and the uniqueness of the H-factor. The organizations represented a diverse set of industries and comprised warehouse and distribution, software sales, and healthcare, with an overall sample size of over 1,000 employees. Across all three samples, the bivariate relationship between the H-factor and performance was between .23 and .24 (.28 corrected for unreliability), and the H-factor explained unique variance in performance beyond all other HEXACO traits, cognitive ability, and core self-evaluations. These finding suggest that the H-factor is a worthwhile predictor of performance and would meaningfully contribute to a selection system. Additional research is required to examine the full potential of the H-factor across all jobs and industries.

Future Considerations for Practice

Given the conceptual potential and current empirical support for the H-factor, there are several possible avenues for its application in the workplace. Examples such as debt collectors, police officers, and defense lawyers highlight some potential uses of the HEXACO model, and the H-factor specifically, within selection contexts. The field of I-O psychology benefits from a wealth of literature that suggests certain personality traits are better suited for certain jobs (e.g., an extraverted sales person would likely be more successful than an introverted sales person), and the H-factor is no different. Additionally, there are potential avenues for building developmental models around the H-factor and encouraging workers to have more honest self- and other appraisals. Merging a high involvement leadership approach with trait activation theory, managers could encourage and nurture these honest appraisals in their employees, which, in turn, could lead to more accurate and effective developmental goals.

Conclusions

Hopefully, the advantages of the HEXACO model and specifically the H-factor have been made apparent. Though the five-factor model is still the most common of the personality models and has provided us

great insight into the psyche and behavior of employees, it has some shortcomings that the HEXACO model addresses through greater construct specificity and better cross-cultural generalizability. The HEXACO model, and particularly the H-factor, has demonstrated exciting promise for the prediction of work and life outcomes, but there is still much more to learn in terms of research and application. As research on personality continues to expand, examining the HEXACO model, its mediators, and its interactions with situational constraints will only provide a richer understanding of individual differences in the field of I-O psychology. Embracing the HEXACO model in future research and practice may allow for better prediction of job performance across a greater variety of situations.

Calling Potential Contributors to “The Bridge: Connecting Science and Practice”

As outlined in [Poteet, Zugec, and Wallace \(2016\)](#), the *TIP* Editorial Board and Professional Practice Committee continue to have oversight and review responsibility for this column. We invite interested potential contributors to contact us directly with ideas for columns. If you are interested in contributing, please contact either Lynda (lynda.zugec@theworkforceconsultants.com) or Craig at (craig.wallace@okstate.edu).

References

Ashton, M. C., & Lee, K. (2007). Empirical, theoretical, and practical advantages of the HEXACO model of personality structure. *Personality and Social Psychology Review, 11*(2), 150-166.

Ashton, M. C., Lee, K., Perugini, M., Szarota, P., De Vries, R. E., Di Blas, L., Boies, K. & De Raad, B. (2004). A six-factor structure of personality-descriptive adjectives: Solutions from psycholinguistic studies in seven languages. *Journal of Personality and Social Psychology, 86*(2), 356-366.

Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*(1), 1-26.

Gibby, R. E., & Zickar, M. J. (2008). A history of the early days of personality testing in American industry: An obsession with adjustment. *History of Psychology, 11*(3), 164-184.

Goldberg, L. R. (1981). Language and individual differences: The search for universals in personality lexicons. *Review of Personality and Social Psychology, 2*(1), 141-165.

Hilbig, B. E., & Zettler, I. (2009). Pillars of cooperation: Honesty–Humility, social value orientations, and economic behavior. *Journal of Research in Personality, 43*(3), 516-519.

Hilbig, B. E., Zettler, I., Leist, F., & Heydasch, T. (2013). It takes two: Honesty–Humility and Agreeableness differentially predict active versus reactive cooperation. *Personality and Individual Differences, 54*(5), 598-603.

Lee, K., & Ashton, M. C. (2004). Psychometric properties of the HEXACO personality inventory. *Multivariate Behavioral Research, 39*(2), 329-358.

Lee, K., & Ashton, M. C. (2014). The dark triad, the big five, and the HEXACO model. *Personality and Individual Differences, 67*, 2-5.

Marcus, B., Lee, K., & Ashton, M. C. (2007). Personality dimensions explaining relationships between integrity tests and counterproductive behavior: Big Five, or one in addition? *Personnel Psychology, 60*(1), 1-34.

Mischel, W. (1968). *Personality and assessment*. New York, NY: Wiley.

Shu, F., McAbee, S. T., & Ayman, R. (2017). The HEXACO personality traits, cultural intelligence, and international student adjustment. *Personality and Individual Differences, 106*, 21-25.

Tett, R. P., Jackson, D. N., & Rothstein, M. (1991). Personality measures as predictors of job performance: a meta-analytic review. *Personnel Psychology, 44*(4), 703-742.

Tett, R. P., Jackson, D. N., Rothstein, M., & Reddon, J. R. (1999). Meta-analysis of bidirectional relations in personality-job performance research. *Human Performance, 12*(1), 1-29.

Tupes, E. C., & Christal, R. E. (1961). *Recurrent personality factors based on trait ratings* (No. ASD-TR-61-97). Lackland AFB, TX: Personnel Research Lab.



On the Legal Front: FLSA Revisions Are Permanently Dead, at Least Temporarily

Chester Hanvey
Berkeley Research Group

Recent developments in the effort to revise federal regulations that define which employees are “exempt” from the Fair Labor Standards Act (FLSA) protection are worth noting for the I-O community. On August 31, 2017, a federal judge in the Eastern District of Texas granted summary judgment to plaintiffs who challenged the legality of the Department of Labor (DOL) final rule to amend the FLSA regulations that define who is exempt. This ruling effectively ends a long-running effort to implement these revisions.

If it seems as though you have been hearing about revisions to the FLSA for years, it’s because you have. The effort to revise the regulations was initiated by President Obama early in 2014. Since that time, revisions to FLSA regulations have been a hot topic within the business and human resources (HR) communities, leading to countless articles and webinars designed to help business navigate the new rules. This topic has also received some attention within the SIOP community. For example, at the 2016 annual conference in Anaheim, I participated in a panel discussion that included SIOP members **Cristina Banks**, **Juan Sanchez**, and **Nancy Woolever** that addressed the implications of proposed FLSA revisions. In the January 2016 issue of *TIP*, Cristina Banks and I cowrote a column that discussed this issue as well.

Although discussion surrounding FLSA revisions have occurred over a period of several years, all of the discussions are related to a single rule change. The rule-making process includes multiple steps that have occurred over a period of several years, which has been further complicated by litigation over the legality of the rule change. To add clarity, I have included a timeline of the key events in the rule-making process up to this point. First, I’ll provide a very brief overview of the FLSA and the exemptions. At the end of this column, I’ll describe the current status of FLSA exemptions and implications for employees, employers, and I-O psychologists.

FLSA Overview

The FLSA was enacted in 1938 and offers a variety of protections to employees, including minimum wage and maximum hours. The most notable protection is the requirement for employers to pay employees an overtime rate (1.5 times their regularly hourly rate) for all hours worked in excess of 40 in a workweek. Organizations may classify employees as “exempt” from FLSA coverage, provided that they meet several specific criteria which are described in federal regulations (29 C.F.R. §541). Exempt employees are paid a fixed salary, regardless of the number of hours they work (often called “salaried” employees).

The three most common FLSA exemptions are the Executive, Administrative, and Professional Exemptions, collectively known as the “white collar” or EAP exemptions. Though the specific criteria to qualify for these exemptions differ, all exemptions are based on the amount of method of pay (“Salary Test”) and the work performed by the employee (“Duties Test”). Legal disputes may arise when an employee challenges their classification as exempt and thus not provided overtime time. I-O psychologists have been successful in applying job analysis methods to provide evidence related to the duties test. Job analysis methods such as observation, self-report questionnaire, and structured interviews are commonly used to evaluate the duties test.

Proposed Revisions

The primary change in the final rule was a substantial increase to the minimum salary for exempt employees: from \$455 per week (\$23,660 per year) to \$913 per week (\$47,476 per year). The new minimum was set at the 40th percentile of earnings of full-time salaried workers in the lowest-wage Census Region (currently the South). Therefore, all exempt employees who previously qualified under one of the white collar exemptions and earn less than \$47k per year will no longer meet the Salary Test and will become nonexempt. Notably, no changes to the duties test were included in the final rule, despite being discussed by the DOL as a possibility and receiving considerable attention.

Timeline of Events

2014, March President **Obama issues a directive** to the Secretary of labor to “modernize and streamline” existing FLSA exemption regulations.²

2015, July **Notice of Proposed Rulemaking** (NPRM) is published, providing a preview of how the DOL intends to modify the FLSA. This also opens a period of public comment on the proposal.³

2015, Sept. Period of **public comment** closed, during which time approximately 270,000 comments were received.⁴

2016, May **Final Rule** published by the DOL with an effective date of December 1, 2016.⁵

2016, Sept. **Lawsuit** filed by 21 states challenging the legality of the final rule.⁶

2016, Nov. Donald **Trump elected president** along with leadership changes within the DOL.

2016, Nov. In response to lawsuit, a federal judge places a **temporary injunction** on the final rule days before it was set to go into effect, thus preventing the rule from being implemented.⁷

2017, July DOL issues a public **Request for Information** (RFI) to assist the department in preparing a new proposal to revise FLSA regulation.⁸

2017, August **Final rule is permanently blocked** by federal judge. This is the outcome of the same lawsuit that resulted in the 2016 temporary injunction⁹

Evaluating Exempt Status Moving Forward

The August 2017 ruling means that the proposed revisions will never take effect. However, the absence of change is significant and newsworthy. The days and months leading up to the original December 2016 implementation date included substantial concern for business leaders and HR professionals attempting to determine how to effectively comply with the new regulations. In the Notice of Proposed Rulemaking, the DOL estimated that 4.6 million exempt employees (20% or all exempt employees) would not have met the increased salary threshold and would no longer have qualified for an exemption.¹⁰ For those who did not meet the new salary threshold, employers would have been required to either increase their salary to the new level or reclassify employees to nonexempt. Both of these options carries some degree of financial burden or legal risk for organizations.

The current exemption criteria for the three white collar exemptions remain in effect, and are summarized in the table below. Readers should refer to the actual regulations¹¹ for more detailed guidance. The DOL has also published Fact Sheets,¹² which contain information about exemption in a concise and accessible format.

In addition to federal regulation, exemption status may also be impacted by state labor laws and regulations. When federal and state requirements differ, the more employee-friendly requirement applies. In

some states, the threshold for exemption status is significantly higher than federal requirements. In California for example, the salary test and duties test are more restrictive than their federal equivalent.

Exemption	Criteria (Must meet all)
Executive	<ul style="list-style-type: none">(1) Paid a salary of \$455 or more per week; and(2) Primary duty is management of the enterprise, department, or subdivision; and(3) Manages two or more employees; and(4) Has the authority to hire or fire others (or whose recommendations are given particular weight).
Administrative	<ul style="list-style-type: none">(1) Paid a salary of \$455 or more per week; and(2) Primary duty is the performance of office or nonmanual work directly related to the management or general business operations of the employer or the employer's customers; and(3) Primary duty includes the exercise of discretion and independent judgment with respect to matters of significance
Professional	<ul style="list-style-type: none">(1) Paid a salary of \$455 or more per week; and(2) Primary duty meets one of the following criteria:<ul style="list-style-type: none">i. Primary duty is work requiring advanced knowledge (i.e., "learned professional"); orii. Primary duty is work requiring invention, imagination, originality or talent in an artistic or creative field (i.e., "creative professional")

Implications for I-O Psychologists

In blocking the final rule, the judge emphasized the importance of the duties test when evaluating exemption status. He noted that the salary level in the final rule was so high that it essentially rendered the duties test irrelevant (nearly all employees who meet the new salary would also meet the duties test) and is inconsistent with the intent of the FLSA. The ruling emphasized the importance of evaluating employee job duties, which is something I-O psychologists are particularly well-qualified to do.

The increased public interest in FLSA exceptions as a result in the rulemaking process may lead to increased demand in evaluating exemption status of employees. Employees with enhanced awareness of exemption criteria may be more likely to challenge their status. Alternatively, employers may be more likely to revisit current classifications to determine compliance. Both present opportunities for I-O psychologists to apply our expertise.

A possible outcome of a classification review is the decision to reclassify employees to nonexempt. This decision has implications for a variety of internal systems that are relevant to I-O psychologists and HR professionals including staffing, labor budgets, scheduling, payroll, and timekeeping. In many cases, employee job duties also change as a result of reclassification. To the extent that this occurs, a variety of additional systems are potentially impacted including selection, training, and performance management. Finally, there are unique legal risks associated with nonexempt employees, including off-the-clock work and meal and rest break compliance. These represent a variety of areas in which I-O psychologists can help employers navigate these changes effectively.

What's Next?

Although the previous FLSA revisions will not take effect, indications are that DOL intends to pursue alternative revisions. As a first step in the new rulemaking process, the DOL issued a Request for Information (RFI) in July to assist the department in preparing a new proposal to revise FLSA regulations. This was issued even before the previous rule was permanently invalidated. The Labor Secretary has stated that he believes the previous salary was too high¹³ but the department has appealed one part of the ruling that blocked the previous final rule to confirm the agency's authority to set a salary threshold, something that was called into question by the ruling.¹⁴ Therefore, it is expected that the DOL will propose an increase in the salary level but at a level lower than what was previously proposed. It is unknown whether changes to the duties test will also be proposed. Given the history of previous rule making process, this will likely take some time.

Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the opinions, position, or policy of Berkeley Research Group, LLC or its other employees and affiliates.

Notes

¹ See Hanvey & Banks (2015) for more detailed description.

² Executive Office of the President (2014).

³ U.S. Department of Labor (2015).

⁴ See: U.S. Department of Labor (2017a).

⁵ U.S. Department of Labor (2016).

⁶ State of Nevada et al. v. U.S. Department of Labor et al.

⁷ State of Nevada et al. v. U.S. Department of Labor et al. (2016).

⁸ U.S. Department of Labor (2017b).

⁹ State of Nevada et al. v. U.S. Department of Labor et al. (2017).

¹⁰ U.S. Department of Labor (2015).

¹¹ 29 C.F.R. §541 et seq.

¹² U.S. Department of Labor (2008).

¹³ Campbell (2017a).

¹⁴ Campbell (2017b).

References

29 C.F.R. §541 et seq.

Campbell, B (2017a, November 15). House committee presses Acosta on OT, fiduciary rules. *Law360*. Retrieved from <https://www.law360.com/articles/985740/house-committee-presses-acosta-on-ot-fiduciary-rules>

Campbell, B (2017b, October 30). DOL to appeal invalidation of white collar overtime rule. *Law360*. Retrieved from <https://www.law360.com/articles/979597/dol-to-appeal-validation-of-white-collar-overtime-rule>

Executive Office of the President (2014). Updating and modernizing overtime regulations: Memorandum for the Secretary of Labor (79 FR 15209). Retrieved from <https://federalregister.gov/a/2014-06138>

Hanvey, C.M., & Banks, C.G. (2015). Wage and hour litigation. In C.M. Hanvey and K. Sady (Eds.), *Practitioner's guide to legal issues in organizations* (p. 283-320). New York, NY: Springer.

State of Nevada et al. v. U.S. Department of Labor et al., No. 4:16-cv-00731, (E.D. Tex. 2016). Retrieved from: <http://www.txed.uscourts.gov/sites/default/files/notable/Memorandum%20Opinion%20and%20Order%20.pdf>

State of Nevada et al. v. U.S. Department of Labor et al., No. 4:16-cv-00731, (E.D. Tex. 2017). Retrieved from: <http://www.txed.uscourts.gov/sites/default/files/notable/Memorandum%20Opinion%20and%20Order%20Dated%208-31-2017.pdf>

U.S. Department of Labor. (2008). Fact Sheet #17A: exemption for executive, administrative, professional, computer & outside sales employees under the Fair Labor Standards Act (FLSA). Retrieved from: https://www.dol.gov/whd/overtime/fs17a_overview.pdf

U.S. Department of Labor. (2016). Defining and delimiting the exemptions for executive, administrative, professional, outside sales and computer employees (81 FR 32391). [Final Rule]. Retrieved from <https://federalregister.gov/a/2014-06138>

U.S. Department of Labor. (2015). Defining and delimiting the exemptions for the executive, administrative, professional, outside sales and computer employees [Notice of Proposed Rulemaking]. Retrieved from: <https://www.gpo.gov/fdsys/pkg/FR-2015-07-06/pdf/2015-15464.pdf#page=2>

U.S. Department of Labor. (2017a). Final rule: Overtime. Retrieved from: <https://www.dol.gov/whd/overtime/final2016/>

U.S. Department of Labor. (2017b). Defining and Delimiting the Exemptions for Executive, Administrative, Professional, Outside Sales and Computer Employees (82 FR 34616). [Request for Information]. Retrieved from <https://www.federalregister.gov/documents/2017/07/26/2017-15666/request-for-information-defining-and-delimiting-the-exemptions-for-executive-administrative>

Crash Course in I-O Technology: A Crash Course in Web Applications and Shiny

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The real power of technology for I-O becomes most apparent when you combine skillsets. This issue, we'll be drawing connections between the ideas in my "Crash Course on the Internet" and my "Crash Course on R" to understand web applications, also known as "apps." By the end of this Crash Course, you'll be able to build a simple data visualization app and deploy it to the Internet for other people to see and play with.

So to start, what exactly is a web application? Remember from my Internet crash course that all interactions between your web browser and the Internet can described as a series of data exchanges. Your web browser sends a request to a server, that server sends you something in return that is hopefully what you asked for, and your web browser interprets what it receives and displays it to you. But now we're talking about apps! Wait a second, you ask yourself – if that's true, how can I use something like Google Docs, which seems to record what I'm writing as I write it?

The answer is a little programming sleight of hand. Fundamentally, Google Docs is still a webpage. Your computer sent a request for the Google Docs page, Google sent it back to you, and then your web browser interpreted that and displayed it. But what's different is that behind the scenes, in the code that your browser received from Google, there are extra instructions. Those instructions say that for everything you type in the webpage, send a copy of what you've done back to Google. Once your web browser gets verification from Google that each group of key presses was successfully received by Google, those data are now "real." If your browser doesn't get that verification, your words will actually disappear a few moments later. You can even see each request being sent and received if you work on a collaborative document with other people. Their text will appear a chunk at a time, but I guarantee you that they're not actually writing that way. Instead, Google is updating roughly every half second to ensure what's called *client-server synchronization* – that what you're typing, what you see, and what everyone else sees are all roughly the same, give or take half a second of update requests.

This type of behind-the-scenes back and forth is what makes your web app appear interactive. You are still in fact bound by the regular rules of webpages I described in my Internet crash course, but programmers have learned to bend those rules to make the webpage appear response to your actions in real time. But the reality is that there are independent flows of data being passed back and forth between you and Google, triggered every half second or at whatever time interval Google has decided is appropriate.

Importantly, different apps handle this communication different ways. If you've ever used the survey platform Qualtrics, for example, you might have noticed it handles things differently. The only time a behind-the-scenes message is sent is after you click away from the question/item you're working on. In other words, it waits until it thinks you're done writing or updating a survey question before it sends a message about what you changed to the Qualtrics server. The unfortunate side effect of this is that if you don't know that these messages are delayed, it's very easy to exit your web browser thinking that changes to your survey have been saved when in reality, the update message was never sent. That happens, when you log back in later, your last change is missing.

Importantly, this sort of behind-the-scenes messaging only occurs when the web app needs to save information about what you're doing locally, that is, if Google wants to keep a copy of your document. If

everything stays local to your web browser, this is unnecessary. For example, I've written a couple of web applications to help with teaching undergraduate statistics in which all processing occurs inside your web browser: [one that automatically generates new datasets and inferential hypothesis testing hand calculation walkthroughs](#) and [one that displays interactive correlation visualizations](#). Once you download the code to run these apps, the code runs entirely on your computer; my server will never receive any information about anything you do with it.

The differences between these approaches have big implications in terms of infrastructure. If you want to build an app that talks to a server, you need to build both the app and the server. Fortunately, many app building systems these days include relatively simple tools to just that and even to give you free server space. In the rest of this Crash Course, we'll explore one such system that you can use to build interactive R-based apps. This system is called Shiny.

R Shiny

When people refer to a "Shiny app," they usually are talking about an entire system of technologies that work together to convert R code into interactive web applications. These technologies are:

- **R.** Remember that R is fundamentally a processing engine; it takes R code, interprets it, and produces output. That's the most fundamental aspect of an R app; you need the app user to send information to R, you need R to process and respond to that input, and then you need R to send information back that the person's web browser can see. But you need them to do it without ever writing—or even seeing—any R code.
- **Markdown.** Markdown is a markup language much like HTML. Remember from my [Crash Course on the Internet](#) that webpages are primarily created by your web browser from HTML code. Under the hood, HTML is essentially plain text plus tags, indicated by <> symbols, that indicate a semantic meaning for the text they surround. For example, <p>This is a paragraph!</p> would render in a web browser as a paragraph (that's what "p" stands for) containing the text "This is a paragraph!" Markdown, in contrast, is a markup language for R. Much like HTML can be used to mark up plain text to convert it into a webpage, Markdown can be used to mark up R code to convert it into a webpage. Thus, to make an app, you need to learn Markdown. Fortunately, it's very easy, as we'll see shortly.
- **pandoc.** pandoc is a software application that runs on your computer that converts between markup languages. It's extremely flexible, but in the Shiny software ecosystem specifically, it's used to convert Markdown into HTML. This is particularly important to you because Markdown is very easy to write, and HTML is not. Thus, you'll be writing your app in Markdown, and pandoc will convert your Markdown into HTML automatically.
- **knitr.** knitr is a library in R that explains to pandoc what parts of your R script you want to be interactive and in what way. For example, say you want an app to automatically download data from Qualtrics and create some figures summarizing it as it is downloaded. That means you'd need R to download the data when the person opens the app, not when you write the code. knitr is what translates your need into something pandoc can understand and stitches everything together at the end.

So that's a lot of systems. Fortunately, R Studio, [the development environment I used to demonstrate R before](#), automates the relationships between these systems so that you don't need to worry too much about the details. The main thing you need to worry about is installing all the software and R libraries that it wants to coordinate.

Let's See It in Action

To make an app using R, you're going to need to install a bunch of software, all of which is free. To make your app accessible on the Internet, you're also going to need to create a free account with a service that hosts shiny apps. So to start, do the following in order:

1. Download and install R and R Studio, if you don't have them already.
2. Within R Studio, download and install the *rsconnect*, *shiny*, and *knitr* packages.
3. Download and install pandoc [from its github page](https://github.com/jgm/pandoc). As of the time of this writing, pandoc v2.0 was recently released, and as of pandoc v2.0.2, it doesn't yet work with the rest of the shiny ecosystem. So if you install the newest version of pandoc and it doesn't work, you might want to uninstall it, go to this webpage, scroll down, and try the last version of pandoc v1 instead, which was 1.19.2.1.
4. Create an account on <http://shinyapps.io>, following the instructions *precisely*. At one point, you'll need to copy some code into R Studio by clicking "Copy to Clipboard" and then pasting into the R Console. Do NOT manually copy/paste; use the button. If you do this correctly, you will see no errors in R. If you accidentally click past the getting started screen and lose the R code you need to copy/paste, just log into your shinyapps account, click on Account > Tokens, and then the "Show" button to get it to reappear.

Once you complete these steps, you won't need to do any of these things again; that was all initial setup. To create your first app using R Studio:

1. In the menus, navigate to *File > New File > R Markdown*
2. Click on *Shiny*.
3. Click on the *OK* button.
4. Save this file somewhere you'll be able to find it later! I suggest naming it *myfirstshiny.Rmd*
5. At this point, you can click the *Run Document* button and see a preview of your new app on your computer. It's an app, but it's not on the Internet yet. When you're done looking at it, close it.
6. Next, in the menus, navigate to *Session > Set Working Directory > To Source File Location*.
7. To deploy it on the internet using your free shinyapps account, in the console, type:
 - a. *library(rsconnect)*
 - b. *deployApp("myfirstshiny.Rmd")*

That's it! Your app now exists on the Internet, and anyone with the address can see it with a web browser.

To understand the relationship between R and Markdown, I suggest closely comparing the Rmd document you just created with the app. Here are a few things to get you started:

- The file starts with several lines of text between `---`. This is called a *YAML header*, and it does two things: (a) it specifies the heading text that appears at the top of your app, and (b) it specifies what to turn the markdown code into when you click Run. Although we're building apps, you can also use Markdown to convert R code into automatically created PDFs, Word documents, and slide decks, among other types.
- After that, you'll see ````{r setup, include = FALSE}`. This triggers Markdown to interpret the next code it sees, until the next `````, as R code to be executed. In this case, you'll see some default options being set in the *knitr* library. Generally, you can just ignore this little code block when writing your Rmd file.

ing your own shiny apps. The word after “r” gives the name of this code block, and anything after that provides rendering options to knitr. In this case, the code block is named `setup`, and the code and output of this code block will *not* be included in the app, although they will still be executed behind the scenes (this is what `include=FALSE` does).

- Outside of ```, you’ll see some plain text, starting “**This markdown document...**” In the app, plain text will appear as plain text! So if you want to add text to your app, it is very easy indeed.
- Next, you’ll see a line with brackets and parentheses. This is your standard web link. For example, [best crash course on the Internet](<http://www.siop.org/tip/july16/crash.aspx>) would render in the app as: [best crash course on the Internet](#). If you’ve ever posted a link on Reddit, you’ll find this type of markup familiar.
- Afterward, you’ll see two hashes plus some text; this renders as a “Level 2” heading. You can generally think of higher numbers as subheadings of lower numbers, much like APA formatting.
- If we skip down a bit, you’ll come to a new R block named `eruptions` with a new function in it called `inputPanel()`, with functions inside it called `selectInput()` and `sliderInput()`. These functions create the HTML code that allows app users to choose options for things that will change in real time based upon what they select in the app. In this case, the `selectInput()` creates a dropdown selector named `n breaks` and labeled “Number of Bins” whereas `sliderInput()` creates a slider bar named `bw adjust` labeled “Bandwidth Adjustment.”
- The most important part of an app is the interactive component. When the interactive component is a figure or plot, you use the `renderPlot()` function, which appears a little below. The easiest way to think about `renderPlot()` is this: whatever “inputs” you specify elsewhere in the app become named elements of a vector called `input`. Thus, when this app runs, there’s a variable called `input` with two named elements: `n breaks` and `bw adjust`. Whenever the user changes the dropdown, `input$n breaks` gets a new value. Whenever the user changes the slider, `input$bw adjust` gets a new value. `renderPlot()` reruns its code based upon these new values any time either of them change. This is what makes the app appear interactive.

Given all of this, you might be able to guess what’s happening behind the scenes in a shiny app. First, the user downloads a web page containing your apps “start state.” When the user changes something, information about the thing they changed is sent to shinyapps.io. Shinyapps.io then reruns the `renderPlot()` code and sends information back to the web browser about what to update/change. In this way, the app becomes interactive.

To Learn More

To learn more about shiny apps, I strongly recommend the [Data Camp lesson on R Markdown and Shiny apps](#). I use it to teach I-O graduate students in my data science class how to make their own apps, and with just one class period of instruction, everyone can create their own basic apps. Even with what we’ve walked through here, assuming you know a little R, you should be able to modify the starter Rmd file to your own needs. If you want to take a more self-study approach, I recommend checking out the [R Markdown cheat sheet](#) for a quick primer on the sorts of things you can do with Markdown. Then just make a few apps!

The main restriction of having a free account on shinyapps.io is that you can only have five active applications at a time, and you can only have 25 “active hours” per month. This is what it sounds like; if someone, including you, opens one of your apps and plays with it for 5 minutes, you’ve lost 5 minutes of your 25 monthly hours. This can add up quickly, so be careful if you want to share your apps with stakeholders beyond a couple of colleagues. But for your own testing and learning purposes, it’s plenty. If you

decide you ultimately want to make shiny apps a major part of your job or business, you'll eventually want to your organization to host its own shiny server; then you don't need to pay for server space or worry about processing limits.

Finally, you can see an I-O relevant example of a [data exploration app I created to rank I-O PhD programs in terms of interdisciplinarity for an article in the next issue of TIP!](#) Basically anything you can create in R can become a shiny app. The only limits are your imagination and your skill with R.

Conclusion

That's it for the seventh edition of *Crash Course*! If you have any questions, suggestions, or recommendations about web applications or *Crash Course*, I'd love to hear from you (rnlanders@odu.edu; [@rnlanders](#)).

I-O Outside I-O: A Quarterly Review of Relevant Research From Other Disciplines



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It is often the case that social psychology is overlooked as a potential source for enhanced learning and application for our practices as I-O psychology. While social psychology is the origin of I-O, we have advanced our own version of applied social psychology beyond the roots in cognitive dissonance or attraction. In this column, we take a stroll back into the social psychology by examining the concepts of rejection and comparative feedback mechanisms. Whether looking at how individuals handle rejection or students experience test anxiety based upon the method of feedback processing, the studies reviewed here provide insights into the relationships between feedback and generalized attitudinal perceptions. In this review, we provide insights into the application of the relevant findings for workplace application.

Deri, S., & Zitck, E. M. (2017). Did you reject me for someone else? Rejections that are comparative feel worse. *Personality and Social Psychology Bulletin, 43*, 1675-1685.

DOI: 10.1177/0146167217726988

In this article, the researchers looked at the factors that might impact how someone reacts to a rejection and particularly focused on whether someone is rejected in favor of someone else (comparative rejection) or no one else at all (noncomparative rejection).

Method and Findings

Four separate studies were used in this article to evaluate this effect. In the first study, 108 participants on the street were approached by an experimenter and asked to participate. When they agreed, they were matched with two other people (both confederates). One of the confederates then volunteered to be the primary participant in a problem-solving task and either choose the other confederate to also participate instead of actual participant (comparative rejection) or choose to do the task (noncomparative rejection). A follow-up survey showed that those who were rejected for someone else reported feeling significantly worse than those rejected for no one else. In the second study, 97 undergraduates participated in a similar study in exchange for class credit. As with the first study, participants who were rejected for someone else reported feeling significantly worse than those rejected for no one else.

In the third study, 202 participants were recruited via MTurk in exchange for a small amount of money. Participants were asked to write about two instances in random order: (a) a time in which they “were rejected and someone else was chosen” and (b) a time when they “were rejected and no one else was chosen.” In follow-up questions, participants reported significantly more negative reactions to comparative rejections than noncomparative rejections.

The fourth study was set up so that it was unclear why the rejection occurred. 201 participants were again recruited and compensated via MTurk and asked to imagine a situation in which they were dumped via text message from a dating partner without any stated reason. Most participants said that they would take steps to find out more information about why they were rejected. Findings from this study showed again that comparative rejections feel worse than noncomparative rejections.

This study also showed that people generally assume that they were rejected for comparative reasons and will only feel marginally better when they were specifically told that it was a noncomparative rejection; in absence of information, people seemed to default to the assumption that they were rejected in favor of someone else.

Thoughts From an I-O Perspective

In our opinion, there are a couple of main takeaways from this research for our field, as we are often involved in decisions that naturally lead to rejections of some people. The first is that people feel worse about rejection when someone else is chosen instead of themselves rather than when no one is ultimately chosen. In the case of promotions in an organization, this information is typically readily known to everyone, and those not promoted will likely have hurt feelings. In the case of not hiring candidates (and to the extent that the feelings of those who are not hired are important for an organization), messaging should be crafted to make it clear to candidates in instances when no one is hired. The second takeaway is that most people will actively try to investigate the reason for a rejection, so providing no information (or inaccurate information) will likely not help lessen the negative feelings. Further, the lack of information about why a rejection occurred has about the same negative results as being rejected in favor of someone else.

Arens, A. K., Becker, M., & Moller, J. (2017). Social and dimensional comparisons in math and verbal test anxiety: Within- and cross-domain relations with achievement and the mediating role of academic self-concept. *Comparative Educational Psychology, 51*, 240-252.

DOI: <https://doi.org/10.1016/j.cedpsych.2017.08.005>

In this article, German researchers examined the relationship between achievement and test anxiety as well as the role of academic self-concept in mediating the relationship. Specifically of interest were the relationships between two types of comparisons and feedback to students with perceived academic confidence. Arens et al (2017) conducted extensive research confirming three major hypotheses indicating the existence of a relationship between peer and dimensional comparisons with test anxiety.

Method and Findings

Researchers conducted this research to identify the factors linked to test anxiety and academic achievement. Arens et al (2017) employed a sample of 5,135 German seventh grade students to evaluate how the combination of domain-specific feedback and peer-comparison feedback processes played a role when considering both the emotionality and worry components of test anxiety, and whether the relation between achievement and test anxiety is mediated through academic self-concept. In their primary research, the researchers found that when applying the generalized internal and external frame of reference (GI/E) model to test anxiety results showed negative relations between achievement and test anxiety within math and verbal domains. Several indicators of partially positive relations across domains indicate a pattern of relations emerged for both the worry and emotionality components. Dimensional achievement comparison processes seemingly function to help develop domain-specific test anxiety factors particularly in the space of worry facets. These relationships did not vary according to gender or achievement levels.

Thoughts From an I-O Perspective

From the perspective of an I-O psychology, this research represents two key issues: (a) Domain-specific feedback still plays a role in test anxiety which has implications for those working in testing programs such as certification, licensure, and educational testing; and (b) peer-comparison processes generate anxiety in those being compared but not to the effect that we have feared for many years. Specifically, Arens and team found a larger effect from academic self-concept and domain-specific feedback than they did in the anticipated peer-comparison comparison process. This second implication seemingly challenges our understanding of feedback and, thus potentially, our understanding of posttest feedback among peers. This speaks to a potential situational distinction in the delivery of feedback on test performance is less fearsome than feedback regarding our workplace performance. With this in mind, it is important to consider exploring this distinction more directly in our field.

On Who to Publish With After Graduation

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I'm pretty sure in academia that you always remember your first "big" publication. For me, it was my master's thesis that got published in 2011. I'll assume my reaction to the process is typical of a lot of other folks—from me not realizing that a high risk R&R was a good thing; to me panicking (shocking, I know) about the reviews and my advisor (**Jim Diefendorff**) laughing at me (I believe his response was "Oh, these aren't even that bad!" and my response was wanting to faint since O-M-G these were the hardest comments in the history of comments); and, of course, to me taking a literal victory lap around the Akron I-O department when the email appeared in my inbox saying "accepted." That first paper came with a wave of relief knowing that I had a chance on the job market. But, I also distinctly remember feeling—what else—panic at the thought of (a) having to publish again and (b) having to publish in the future without Jim. How, after 5 short years, was I supposed to create a pipeline to sustain a tenure-track line if I couldn't focus largely on the research pipeline I was building in my graduate program?

This is a common concern I hear from graduate students and assistant professors, and it is a point of discussion at most PhD or early career consortia I have been a part of. Specifically, in those early years after graduating, do you need to separate from your advisor? What about anyone affiliated with your graduate program (e.g., current/former faculty members and graduate students)? You hear frequently when you discuss tenure that you need to be distinct from your advisor, and I agree that you should build a research identity. However, in 2015, I was part of a panel at the Academy of Management conference with Anthony Klotz about productivity, and he poignantly raised the following point: You've just built a solid pipeline with your advisor, a person who is likely one of your favorite coauthors—is it really advantageous, and even healthy, to give that up? A big part of successful collaborations is knowing how people write, think, and approach research, and it's likely the case that you know how your advisor, or other people from your program, think better than anyone else at the point of graduation. If the mantra to get tenure continues to be "publish or perish," it seems risky to take your pipeline and potentially start over.

What really motivated me to think through this topic was a discussion I had with **Joel Koopman**, a close friend and colleague of mine at Texas A&M University who is my guest author for this column. Joel was visiting Tucson to work on some research projects, and we were taking a walk through my neighborhood to kick around some framing ideas for a new paper we were writing. Our conversation, though, began to get sidetracked when we started talking about various advice we had been given since graduating about who we *shouldn't* publish with (not necessarily from the same people, mind you, but everyone has opinions to share on this). Here's a list of rules, and associated rationale, that we've heard over the years:

1. Your advisor: You have to develop your own identity instead of being a "mini-me" version of your advisor.
2. Other faculty currently affiliated with your PhD program: Bye, crutches!
3. Current and/or former PhD students from your PhD program: How will anyone know who is really driving the projects?

4. Faculty at your *new* program: You're being "rescued" by them for tenure.
5. Anyone at any school who is more senior: Your own contributions will be overshadowed by their seniority in the field.
6. Publishing more than once with the same author team: Everyone is just tacking everyone on to projects and you can't *really* be contributing, right?
7. PhD students: Great in theory, but you need to work on that pipeline in your early years and PhD students may take too much developmental work.
8. Other junior faculty: Risky because no one has a lot of experience.
9. Your spouse/family member: This doesn't apply to either of us, but we've still heard it!
10. Your cat: Kidding! I'm just going for continuity with my last column. But, really...

If you look at that list, you have to ask yourself: Is there *anyone* left to publish with? After talking with Joel about this, what we realized was that these views—although well-intended—were taking the fun out of the publishing process by making us second-guess our research teams. This whole publishing "gig" is supposed to be fun, after all. More seriously, that list rules out working with all of the people who can help you develop as a scholar. So, what we wanted to write about in this column is how we have structured our own publishing pipelines in a way that hopefully sustains productivity *and* allows us to continue working with people we enjoy.

Working With Senior Scholars

Joel and I met at SIOP in 2013 through mutual friends from graduate school. We had both heard a bit about each other's work, and were going to be one year apart on the tenure track (I had just taken my first job, and Joel was gearing up for the job market). After talking about research ideas with a few others folks (**Chris Rosen** and **Russ Johnson** in particular), we realized that there were a lot of fruitful opportunities to "join forces" and design a series of experience sampling studies together, because that is what we were truly passionate about. There was certainly a risk to this approach: Chris and Russ were already well-regarded senior scholars who had ties to each of us (for Allie, Chris and Russ came from the same PhD program; for Joel, Russ was a member of his dissertation committee at Michigan State). Yet, we felt strongly that the research and professional development we would gain from this collaboration outweighed the risks. Instead, being mindful of the potential issues, we have designed our projects in such a way that each person is able to clearly contribute (e.g., we know exactly who is handling data collection, who is largely cleaning and analyzing the data, and who is going to collaboratively write the theoretical overview). This approach has been successful and—more importantly—a great deal of fun for us to be a part of, and because of this, we feel that we made the right choice.

Working With Junior Faculty

A benefit to working with senior scholars is their breadth of knowledge and experience; with a team of junior faculty, you are working "without a net." Although this experience has seemingly felt a bit more challenging and carries a potentially larger risk, it is also a great way to develop different skills that may have been more central at other PhD programs compared to the one you were a part of (e.g., some schools may focus more on writing theory; others may have more classes focused on unique sets of methods and analytic approaches). We both have several projects with people who we have met randomly at symposium sessions, at doctoral consortia, or, to be perfectly honest, at the hotel bar in the center of the conference, and several of these individuals have become close friends over the years. Because of this, not only do you have an excuse to hang out at conferences and have long Skype calls, but you can leverage the singular focus and motivation that comes from everyone hearing that ticking of the

tenure clock in the background. Plus, as has been the theme of other Academics' Forum columns as of late, it is nice to have a support network of people who are in the process with you, and truly "get it."

Bringing PhD Students Onto Projects

Both of us had really positive experiences with our PhD advisors, and because of this, it became important to both of us to involve PhD students in our research. Although developing students can certainly take a great deal of time, they can truly be a "force multiplier" because PhD students allow you to divide and conquer in a lot of unique ways. For example, although they do a deep dive into the literature or run through analyses, you as an advisor can spend more time focusing on the broader theoretical framing and positioning of the paper. In an effort to tackle some of the issues associated with authors noted above, we have involved PhD students in projects with senior colleagues as well as our *own* advisors. Working collaboratively with your advisor and your advisee is a really cool, and often amusing, experience—it's cool to see the lineage of advisors and advisees on a single paper, and it's amusing to see how many of your advisor's habits/techniques you have picked up on and are now passing down to *your* advisee. Plus, the irony of telling your PhD advisee in front of your PhD advisor that "the reviews aren't that bad" when a high risk revision comes in is not to be missed.

So, Should You Just Ignore the Publishing "Rules"?

Collectively, we have spent 8 years (4.5 for Allie; 3.5 for Joel) trying to figure out who we should be publishing with as we try and "make it" in this career. We still experience a lot of uncertainty and self-doubt about our own publishing records, but there is one thing that we know for sure: This career is a lot more fun when you're publishing with your friends and people you truly trust. If we look at our CVs, this may be the one consistent feature of all of our publications. Of course, this has led us to violate almost all of the rules we listed above, and maybe that's okay. Sure, we've tried to diversify our author teams and minimize our risk as much as possible, but even still, each of our publications can be criticized for one reason or another.

We realize that this isn't exactly the most upbeat note to end on, so *our* advice on this topic is this: Love what you are working on and who you are working with, and try your best to forget about the rest of the rules. Instead of driving yourself crazy trying to craft the perfect CV, you should focus on doing good research and having fun doing it. If that means publishing with your advisor every now and then after you graduate, then go for it. If you work well with a particular group of scholars, then you should start as many projects together as you want. If your passion is working with doctoral students, then we think that is fantastic. Because if we've learned anything else in all of the advice we have been given, it's that we are really, really lucky to have these jobs, and you shouldn't let stress about who to publish with diminish that.

**Max. Classroom Capacity:
Hath Thy Toil O'er Textbooks Consumed the Midnight Oil...?**

**Loren J. Naidoo
Baruch College and the Graduate Center, CUNY**



Greetings readers!

At the beginning of each semester for most of my “professing” career I have had what is likely to be a familiar conversation for many of you. These conversations generally hit one of more of the following notes:

- “Hey prof! Great first class. Can I buy an older version of the textbook? The new one is almost \$200.”
- “Hey prof! Is there an online version of the textbook? By the way [student frowns], you sure are energetic for 9 AM...”
- “Hey prof! Do you put the textbook on reserve at the library? I can’t afford to buy it. By the way, I heard your class was good but your ratemyprofessors ratings are all over the place...”
- “Hey prof! What’s the deal with all of the pop quizzes? I hate pop quizzes. Anyway, I downloaded a free pdf of the textbook from this sketchy website—if anybody wants it, let me know...”

I’ve never written a textbook, but I respect my colleagues’ right to sell their work. For most of the undergraduate classes that I’ve taught, I’ve been able to find textbooks that I think are fantastic. I always did what I could (legally!) to help students in need to gain access to required textbooks for my classes (e.g., by loaning out my own copies to students, putting a copy on reserve at the library, etc.). I also tended to stay with the same textbooks over the years (e.g., I’ve used Franzoi’s excellent social psychology text for over 15 years) so that students could sell their used copies at the end of the semester—that is, until the dreaded “next edition” arrived. For a long time I didn’t seriously consider not using textbooks because (a) like most people I’m a person of habit, and it is hard work to significantly redesign a course; and (b) I like the texts that I use, and I think they benefit student learning. However, like many of you who have been teaching for that long or longer, I’ve seen print textbook prices skyrocket in the last few years.

Although it’s easy to dismiss students’ complaints and reluctance to buy textbooks as poor judgment about the value of their education, there are many reasons to take their concerns seriously. First, tuition and other costs associated with attending higher education in the US have increased in the last few decades. According to the National Center for Education Statistics, between 2005 and 2015 college and university costs (tuition, fees, and room and board) increased by 33% for public institutions and 26% for private nonprofit institutions, adjusted for inflation. Costs for private for-profit institutions actually decreased by 18%, though they remain higher than those at public institutions. Unfortunately, student financial aid has not kept pace with rising costs. For example, the average cost of attending a public 4-year university was \$18,632 per year in 2014-15, far greater than the average amount of financial aid from federal (\$4,700), state/local (\$3,867), or institutional (\$5,686) grants. On the other hand, loans among these students were \$6,743 per year, on average. The Institute for College Access & Success reported that 68% of students who graduated in 2015 had student loan debt, to the tune of \$30,100 per borrower, on average. They noted that this figure is likely to be an underestimation given that they relied on institutional self-reports for these data. According to the Federal Reserve, student loan debt now exceeds credit card debt at \$1.4 trillion and has risen steadily over the last 30 years. We are at a point where there is a legitimate debate taking place about the value of higher education. Although there’s reason to believe that an undergraduate education remains a solid investment, the barrier posed by increasing costs and debt burden is likely to have the greatest impact on the low-income students who stand to benefit the most from pursuing a college degree.

Although textbook costs are a small piece of the puzzle (e.g., about \$1,200 per year on average), they nonetheless significantly impact many students. For example, a 2014 U.S. PIRG Education Fund survey found that two out of three college students chose *not* to buy a required textbook due to its high price, almost all of whom believed that they suffered academically as a result. Importantly, textbook costs are among the only educational costs that faculty have considerable leeway in determining.

Textbook publishers have shifted in response to rising costs and developed several alternatives to print textbooks. They have, for example, provided more options to customize their products to reduce costs, such as adding or deleting chapters from a text, printing in softcover or loose-leaf formats, and textbook rentals. More significantly, many textbook publishers have pivoted towards so called “e-textbooks” or “online learning platforms” in which textbook material is presented online, often along with supplementary materials and functionality such as video clips, discussion boards, practice exercises, assessment (e.g., test bank and test delivery), and grading. The sophistication of some of these systems is impressive, and many have very useful features. However, there is a cost that students generally bear that, in my experience, tends to be less than that of typical print textbooks but is not insignificant.

Another option is not to use for-purchase textbooks at all. This is not a new idea, as those of you who, for example, have developed cost-free “course packs” can attest. However, I would like to talk about this and similar options in the context of the movement toward Open Educational Resources (OER).

OER

The OER movement is rooted in the principle that access to a high-quality education is a universal human right, and the costs associated with educational materials represent a significant barrier to obtaining this right. In part the idea is to encourage the use of educational resources that are either in the public domain or have an open license, resulting in a cost-free class for students for ease of access purposes. However, another important goal is to encourage participation in and cocreation of educational resources by instructors. A review of the empirical research by Hilton (2016) suggests that classes that use OER are at least as effective as those that use commercial textbooks. Many universities are taking note of OER and starting to develop resources to help instructors shift towards a cost-free model of instructional materials.

I recently converted one of my courses to OER. I’d like to share my experiences and describe how I approached things. The course, The Psychology of Motivation and Learning, was one for which I had great difficulty finding a textbook that I was satisfied with. In addition, I was simultaneously in the process of redesigning the course for fully online delivery. I also received support from my university in the form of a small internal OER grant. These facts certainly made me that much more open to shifting to OER. However, having gone through the process once and seen the benefits, I am now much more open to moving other courses to OER.

To start, it’s important to note that OER materials are not restricted to textbooks. They come in a variety of forms including curricula, syllabi, lecture notes, assignments, tests, projects, audio, videos, and animation. The general idea is that they are free to use for educational purposes, but there are different forms of copyright that are nicely summarized here: tlinnovations.cilearn.com/digital-copyright/. For my course, I started by rethinking which topics I wanted to address and in what order. Instructors often base these decisions on the textbook they use, and it can be quite liberating to be free of this constraint! I started with the assumption that I would have a required reading associated with each topic. I would consider short videos for some topics as well. Next, for each topic I considered what I wanted to achieve with the reading. Did I want to provide students with more theoretical depth than I could deliver in class meetings? Did I want students to read primary empirical research articles to get into the weeds and understand where relevant findings come from? Did I want them to read an article from the popular press to understand applications of theories or research?

I first identified two textbook chapters that would be ideal readings to build theoretical depth around several topics. Small portions of existing works (e.g., textbooks) can be reproduced within fair use guidelines, though what constitutes a small portion is difficult to know. I consulted with my library (a key resource!) to make sure that using these chapters would not violate copyright. For several other topics, I found empirical journal articles. For the remainder, I looked for resources online. There are lots of resources to be found, many of which are NOT suited to teaching psychology, management, or specific areas within these realms. It can be time consuming to navigate through all of the dead ends. I can suggest a few sites that you may find helpful. The first is SIOP's teaching wiki (siopwiki.wikifoundry.com/). Here you will find syllabi for I-O classes, exercises, assignments, video clips, case studies, and readings. Another is the Multimedia Educational Resource for Learning and Online Teaching (MERLOT II; www.merlot.org). MERLOT II is the California State University System's searchable collection of online textbooks and other open-access materials. Third, the NOBA project (www.nobaproject.com) is an excellent collection of open-access psychology resources created by social psychologist Ed Diener.

After perusing these websites, I looked for articles from the popular press (e.g., recent articles from theatlantic.com), and videos relevant to course topics. For a couple of other topics, I decided to have students choose their own readings, consistent with the OER goal or getting students engaged in the development of educational materials. I submitted pdf versions of all of the assigned readings to my library's e-reserve department. To the extent that there were copyright costs associated with the use of the journal articles, the library would bear these costs, not the students. Again, consulting with your library is key! The final step was that in my syllabus under the heading "*Required Textbooks*" I wrote, with gusto: "*None! This is an OER (open educational resources) class, which means that you are not required to spend a dime on books or other such expenses.*"

Besides the financial benefits to students, converting a course to OER is a great excuse to rethink your assumptions and educational goals for a course. Before, I felt locked into using the best available textbook, which I never much liked. Many of the chapters went into great detail on areas I didn't think were particularly important, and much of what I wanted to talk about wasn't in the text. But in requiring students to buy the textbook, I felt obligated to assign readings, even if they weren't terribly relevant. By dropping the textbook I assigned a greater diversity of readings, and in particular, more readings which emphasized real world application. For example, rather than assigning a textbook chapter on physiological arousal and performance, I went into more depth on the theories and research during class time, and assigned an article from The Atlantic on how Olympians stay motivated. This provided students an opportunity to apply motivational theories to a real context. Students seem to appreciate the diversity of voices and perspectives in the reading assignments.

One final note. Some of you have written, are writing, or are considering writing a textbook. You might think that the OER movement is hostile to this activity. However, rather than writing a textbook with a publisher, you might consider publishing an open access textbook. Yes, by doing so you would forego the royalties. However, publishing a textbook as an OER compensates faculty in the familiar common academic currency of scholarly impact. A well-written OER textbook has few barriers to widespread adoption.

As always, I eagerly await your comments, questions and feedback!

Reference

Hilton, J. (2016). Open educational resources and college textbook choices: A review of research on efficacy and perceptions. *Educational Technology Research and Development*, 64, 573-590.

Practitioner Forum: An Update from the Professional Practice Committee

Will Shepherd
Chair, Professional Practice Committee

The Professional Practice Committee volunteers continue to do an incredible job on your behalf. There are some exciting new resources they have created. Also, there will be some expanded and new offerings at the SIOP Conference in Chicago. Here are some key highlights:

- Practitioner Resources Videos
- Early Career Practitioner Consortium
- Speed Benchmarking and Speed Mentoring
- The Professional Practice Update
- Practitioner Reception

Practitioner Resource Videos - **Lynda Zugec** has taken the lead to produce a series of "Practitioner Resources Videos," which highlight the resources that SIOP has available for practitioners. These short video clips provide an overview of resources and can be found on the Professional Practice Webpage located on My.SIOP: <http://my.siop.org/ProfessionalPractice>

Be sure to check out the videos if you would like to hear more about the following:

- Early Career Practitioner Consortium
- Newsletter
- Salary Survey
- SIOP/SHRM White papers
- Career Paths Webpage
- "The Bridge: Connecting Science and Practice" *TIP* Column
- Mentor Program

Early Career Practitioner Consortium (ECPC): Due to the hard work of **Vince Conte** and **Ashley Guidroz**, the inaugural 2017 ECPC was a resounding success! All 40 slots were filled and the attendees spent the day with an impressive roster of seasoned I-O practitioners from various work settings and areas of specialization. The all-day session included a self-assessment using the newly minted SIOP competencies, as well as a personal profile from the Hogan Personality Inventory. In addition, participants learned about trends in I-O careers, networked with each other and received mentoring from our panel of I-O practitioners.

New for 2018, the ECPC will expand enrollment and provide more tailored mentoring and break-out sessions to better meet the diversity of work experiences and career goals (e.g. Consulting, Government, Corporate Research, Individual Practitioner). The ECP will provide three career development experiences in a one-day program on the Wednesday prior to the annual 2018 SIOP Conference:

1. I-O professionals sharing their research and personal experience related to the most prevalent and emerging career trajectories for practitioners with I-O training
2. A self-assessment of participant competencies (hard and soft skills) that match the requirements of these career options
3. Ongoing mentoring from practitioners who represent a diverse group of I-O professionals now engaged in both current and cutting-edge practice.

Who should attend? Any I-O practitioner with up to 5 years of postdegree (PhD or terminal master's) work who is interested in learning more about their potential and future in an I-O career. Check http://www.siop.org/Conferences/18con/Regbk/practitioner_consoritum.aspx for details.

Speed Benchmarking and Speed Mentoring: **Michael Pate** and **Jerilyn Hayward** are working on an exciting new concept called Speed Benchmarking. Applying the successful speed mentoring program framework to benefit mid-late career internal/external I-Os, the PPC will offer professionals with 10+ years of business experience the opportunity to engage with other SMEs on a variety of topics for two 30-minute speed benchmarking discussions. Specific topic experts will facilitate dialogue between experienced participants rather than "teaching" less knowledgeable colleagues. Topics will include Leadership Development, Big Data, Legal/Ethics, and Engagement (among others). Speed Benchmarking will occur Thursday, April 19, 5:00–6:30 PM, in the Fountainview Room.

For those professionals with less than 10 years of experience, the PPC also will be hosting the speed mentoring event again. Speed Mentoring will occur on Friday, April 20, 5:30-7:00 in the Superior A room. See future communications for more details and sign up opportunities for both events.

The Professional Practice Update: **Ben Porr** and **Meredith Ferro** helped launch the update in January 2017 to provide news highlights each quarter that are of particular interest to practitioners. Each issue focuses on updates related to the PPC, SIOP, and the broader I-O field. We received great feedback and plan to continue the quarterly version of the newsletter in 2018, introducing new features as the committee determines items that are of greatest interest to the readers in our practitioner community.

Practitioner Reception: Due to the success of last year's SIOP reception, we will again be hosting a Professional Practice reception at the 2018 conference. It will be held Thursday evening (4/19) from 6-7:30pm in the Sheraton II and III ballrooms. This event will feature fun activities (e.g., photo booth) and free giveaways (including wine!), and is a great way to develop new and strengthen existing relationships with other SIOP practitioners. **Emily Solberg** is helping organize an amazing event. Stay tuned for more details!

Summary

A big thank you again to all the committee volunteers. See everyone soon in Chicago!

SIOP in Washington: Advocating for I-O in Federal Public Policy

Since July 2013, SIOP and Lewis-Burke Associates LLC have collaborated to make I-O science and research accessible to federal and congressional policy makers. SIOP has embedded a foundational government relations infrastructure within the organization, enabling SIOP to develop an authoritative voice as a stakeholder in science policy in Washington, D.C. and to promote SIOP as a vital resource for evidence-based decision making.



Jill Bradley-Geist
University of Colorado Colorado Springs

Bill Ruch
Lewis-Burke Associates LLC

Tax Reform Update: House Bill Passes, Senate Bill Under Consideration

On November 16, the House of Representatives passed *The Tax Cuts and Jobs Act* (H.R. 1), along party lines. The Senate later moved their bill out of Committee and began debating the measure on November 30. Senate Republican leadership is finalizing modifications to the legislation that were needed to secure the necessary 50 votes to pass the bill. The Senate Republican leadership anticipates passing their bill late on December 1 and entering conference negotiations with the House the week of December 4. Ultimately, Congress hopes to reach agreement on a final bill that can be sent to President Trump by the end of the year. Of particular concern to SIOP is a proposal in the House bill that would result in increased tax liability for graduate students.

Many doctoral students currently receive a tax-free tuition waiver or benefit as part of their graduate package under Section 117(d)(5) of the tax code. If the House proposal is included in the final congressional tax package, it would repeal 117(d)(5) and make any waived tuition taxable, thus adding many thousands of dollars to an individual graduate student's taxable income. For some students, this could result in triple the tax liability and several thousands of dollars in additional payments to the IRS. The Senate is currently debating its own version of tax reform, which does not contain the House provision, but it may be considered as part of the conference negotiations with the House on a final bill.

In response to concerns about tax reform's impacts on graduate students, SIOP has joined other scientific societies in encouraging grassroots advocacy by members to urge congressional representatives to preserve graduate student tax benefit provisions. For members who want to take action, the National Association of Graduate-Professional Students (NAGPS) has put [together helpful advocacy materials for outreach by graduate students](#). The materials include a script for contacting members of Congress, contact information for member offices, sample tweets, and other resources. As these bills are further considered, SIOP will seek additional opportunities to join with the scientific community on similar advocacy efforts on behalf of its membership.

Appropriations Update: Time Running Out to Fund Government

The current continuing resolution (CR) that has kept the federal government running since the start of the new fiscal year (FY) on October 1 is set to expire on December 8. This deadline gives Congress little

time to negotiate and pass new legislation approving FY 2018 spending. With most of Congress' attention directed towards tax reform, disaster relief, and other issues, it is increasingly likely that they will be forced to pass another short-term CR that maintains current FY 2017 funding levels to prevent a government shutdown. Senate Majority Leader Mitch McConnell (R-KY) had initially said that appropriators had set their sights on passing a catch-all spending measure, known as an "omnibus" appropriations bill, before the December holiday break, but public disputes between President Trump and Democratic leaders threaten to stall any negotiations.

The current Senate and House FY 2018 appropriations bills exceed self-imposed spending caps set by the *Budget Control Act of 2011*. Without changing or repealing the caps, any spending deal that exceeds them would trigger automatic cuts, also known as sequestration. Republicans want to raise the caps to provide more money for discretionary defense spending, while Democrats will only agree to this if the caps are also lifted for nondefense discretionary spending. Further complicating matters is the issue of Deferred Action for Childhood Arrivals (DACA), which Democratic leaders have indicated must be part of any FY 2018 budget deal to gain their support for the measure to pass.

On November 28, Minority Leader of the House Nancy Pelosi (D-CA) and Senate Minority Leader Chuck Schumer (D-NY) chose not to attend a scheduled budget negotiation meeting at the White House because the proposed CR did not include a provision to protect "Dreamers" under the DACA program, and the president preemptively tweeted that the meeting likely wouldn't result in a deal to fund the government. Republican leadership is now considering a strategy to implement a CR that would sustain government funding through December 22 and a second one to fund operations through January. It is thought that the deadline before Christmas could put enough pressure on both Republicans and Democrats to agree on top-line budget numbers, and the second CR would allow lawmakers time to fill in the details and pass a final FY 2018 spending bill.

In April, SIOP submitted written testimony to the House and Senate Appropriations Subcommittees on Commerce, Justice, and Science urging the Subcommittees to appropriate \$8 billion for the National Science Foundation (NSF) in fiscal year FY 2018. The testimony also conveys the importance and applications of social and behavioral science research funded through the Foundation. Lewis-Burke Associates LLC and SIOP will continue to monitor the situation and seek opportunities to engage on behalf of these and other crucial research programs as deliberations continue.

NSF Releases Solicitation for Cyberlearning for Work at the Human–Technology Frontier Program

The National Science Foundation (NSF) recently published a [solicitation](#) for the Cyberlearning for Work at the Human–Technology Frontier program, which aims to advance innovative technologies that facilitate science, technology, engineering, and mathematics (STEM) education and reeducation for those entering an increasingly technological workforce. This solicitation is a revised version of the Cyberlearning and Future Learning Technologies program and advances the agency's Work at the Human–Technology Frontier Big Idea, which will [guide forthcoming NSF investments](#). This is also an ideal opportunity for I-O experts to ensure that the science is incorporated into future training programs for a more technologically integrated workforce.

This interdisciplinary program integrates education and learning sciences, computer and information science and engineering, and cognitive and behavioral sciences in pursuit of experimental cyberlearning technologies. The solicitation includes the directorates for Computer and Information Science and Engi-

neering (CISE); Education and Human Resources (EHR); Engineering (ENG); and Social, Behavioral and Economic Sciences (SBE).

Projects should demonstrate innovations in both technology and learning and should address the following:

- “Design and develop future learning environments to educate or reeducate workers for new work environments and experiences in collaboration with advanced technology;
- Develop relevant formal and informal learning experiences as well as just-in-time training on the job;
- Support the needs of diverse workers from a broad set of backgrounds and experiences; and
- Support the future work of teachers in classrooms and other related settings.”

NSF anticipates making \$15 million available for approximately 20 awards, with individual awards of up to \$750,000 over a maximum of 3 years. No cost share is required. The submission deadline for full proposals is **January 8, 2018** and then annually on the second Monday in January.



SIOP Members Spotlight: Veterans **Adam Kabins**

In our current TIP feature of SIOP members engaging in government advocacy work, Adam Kabins discusses advocacy initiatives to support veterans.

In continuation of SIOP’s partnership with Lewis Burke Associates, the Government Relations Advocacy Team (GREAT) has defined one of its key advocacy areas for 2018: supporting veterans transition. Specifically, over 200,000 veterans transition out of the military and into the civilian workforce each year with associated challenges. Although veteran unemployment has continued to decline, many veterans still face issues as they exit the military and enter civilian life. These issues can range from difficulty in translating the KSAOs acquired during the military into meaningful civilian competencies to integrating in a work culture that clashes radically with deep-seated military ideology and approach.

Likewise, numerous government, military, and private organizations have attempted to provide solutions to some of these issues. SIOP recognizes that IO psychologists are uniquely positioned to help support effective veteran transition programs. This includes translating complex military assignments into meaningful work characteristics to support better veteran employment, coaching veterans to have a more strategic viewpoint on their career goals, training recruiters and hiring managers to better understand military experience, as well as helping organizations improve their selection processes so that it is not unfairly biased against veterans.

To those efforts, the GREAT committee has solicited the help of veteran researchers and practitioners to create a Veteran Transition subcommittee dedicated to: (a) advocating for I-O psychologists’ involvement in support of these efforts and (b) creating a forum to discuss research streams and practical solutions to veteran transition problems to be acted upon and implemented through the advocacy team. The subcommittee has released a statement that describes the role that I-O psychology can have in supporting veteran issues.

The subcommittee is led by Dr. Adam Kabins who leads the prehire selection consulting in North America for Korn Ferry. In addition to presenting on veteran’s issues at past SIOP conferences, Adam has pre-

sented to the Department of Defense on similar topics as well as supports the Leveraging Military Leadership Program (LMLP) at Korn Ferry. The LMLP provides pro bono career coaching and management guidance for veterans who recently exited the military as well as proprietary services for organizations looking to become a veteran hiring destination.

The Veteran Transition subcommittee is an eclectic group of individuals spanning all areas of I-O psychology: external consulting, internal consulting, research, and military:

- **Dr. Julia Bayless:** Julia is the director of Talent Assessment at Capital One, focusing on identifying top talent through robust and innovative solutions across the Capital One enterprise. Capital One has a host of veteran and veteran family initiatives related to joining the organization for well-matched employment opportunities as well as providing support for veterans and their families while on active duty.
- **Dr. Meredith Kleykamp:** Meredith is an associate professor of Sociology at the University of Maryland and director of the Center for Research on Military Organization. Her research examines the connections between the labor market and three specific institutions: the military, prison, and unions. She has a particular interest in elucidating the mechanisms underlying differences between civilians and veterans, and how the societal context of reception of military veterans shapes their transition from military to civilian life.
- **Dr. Peter J. Reiley:** Peter is the cofounder and vice chairman of the board of directors for the Foundation for VETS (Veteran Employment Transition Support), a national 501(c)(3) nonprofit public charity supporting military veterans through research and evidence-based practice. He is also an active-duty Air Force officer with over 20 years of military service and currently serves as director of Personnel & Assistant Professor of Behavioral Sciences & Leadership at the U.S. Air Force Academy.
- **Dr. Christopher Stone:** Christopher is an assistant professor of Management and associate department chair in the School of Business at Emporia State University. After serving 8 years in the United States Air Force, he became interested in how the veteran label affected professional pursuits in civilian life. His work includes researching how stereotypes of veterans are used in employment selection and identifying the barriers veterans face in the pursuit of higher education.

Becoming a SIOP Fellow... A Story From the Trenches

Garett Howardson

Tuple Work Science, Ltd/Hofstra University & The George Washington University

Liberty Munson

Microsoft



In the last edition of *TIP*, we provided an overview of the SIOP Fellow application and selection process. We have heard from many that this process feels a bit like a black box, especially for practitioners who typically don't have the body of work in terms of publications that academics do. As a result, we thought we'd dig a little deeper into the journeys of several of our practitioners who have earned this prestigious designation.

In this edition, you can read about the journey that **Cheryl Paullin** took on the road to SIOP Fellow below. It doesn't matter if you're a practitioner or an academic, her story reveals several great tips for how you too can become a SIOP Fellow. Here's her story...

Share a little a bit about who you are and what you do.

I am currently a division director at the Human Resources Research Organization (HumRRO). I lead the Talent Management and Analytics Division, with four managers reporting to me. I continue to spend some of my time leading technical project teams and managing consulting engagements. I still roll up my sleeves and do some of the basic technical work. In the past, I also served in a business development role.

I have worked in the field of I-O psychology for 30 years. The bulk of my career has been devoted to developing and validating psychological assessments that are used to support high-stakes employment decisions, including preemployment screening and selection, promotions, and credentialing. I also have experience providing expert witness services, typically related to an organization's use of high-stakes assessments. I received my PhD in I-O psychology from the University of Minnesota and spent 15 years at PDRI in Minneapolis before joining HumRRO in 2005.

Describe the "work" that you did that you think played a key role in becoming a fellow. What were your innovations/unique contributions to the field? How did you "significantly" impact the field?

In my opinion, I "significantly" impacted the field by leading applied research projects (primarily assessment development and validation) for about two dozen different clients, many of them organizations that play a key role in protecting U.S. citizens and supporting our way of life, as well as organizations that have a global impact. Examples include all three branches of the U.S. military (Army, Air Force, and Navy); public safety organizations at the local, state, and federal levels; and commercial organizations in the power generation, telecommunications, insurance, and transportation industries. I have also worked with many different jobs, many of which are mission critical for their organization and also for public safety and protection. Examples include firefighter, police officer, federal law enforcement agent, intelligence analyst, surveillance specialist, military helicopter and remotely-piloted aircraft (RPA) pilot, Army officer, Army and Air Force enlisted occupations, civil engineer, air traffic controller, mail carrier, and skilled manufacturing technician.

Describe the nomination process. How did you get nominated? Did you find someone to nominate you, or did someone else nominate you? How did you find people to endorse you or did your nominator do that?

Keep in mind that the nomination must be made by someone who is already a SIOP Fellow. In my case, my manager at the time, **Suzanne Tsacoumis**, who is also a SIOP Fellow, initiated the process. She offered suggestions for potential endorsers and asked me for names of people I believed would be willing to act as an endorser. She contacted them on my behalf.

What did you include in your self-statement?

I started by giving well-deserved credit to the people who have helped me develop along the way and then provided an overview of the way in which I believe I have impacted the field. I described in greater detail four applied research projects that demonstrated the impact I had on client organizations, the people who work there, and the public. I also summarized ways in which I shared research findings and lessons learned, for example, through presentations at the SIOP and IPAC conferences, and mentoring junior I-O psychologists. Finally, I included a summary of ways in which I give back to the profession through service activities at the local and national levels.

What do you think is the secret sauce to becoming a Fellow as practitioner?

For most practitioners, there won't be a long list of academic publications that demonstrate long-term streams of research. On the other hand, practitioners may be in a great position to demonstrate how their work has had a real *impact* on individuals, organizations, and society. That said, practitioners also need to be able to demonstrate how their work has helped advance the field of I-O psychology. Practitioners do this by mentoring junior I-O psychologists, presenting at conferences (and maybe publishing), and *educating people other than students* about what I-O psychologists can do. I feel that educating people other than I-O psychologists is one of the key ways in which practitioners advance the field. Finally, I think it's important to show that you give back to the profession through service activities.

What advice would you give to those interested in becoming a fellow?

- Learn how work that you do impacted others and document it. For example, what was the long-term consequences of implementing a program you designed?
- Document the ways in which you interact with non-I-O psychologists, especially instances when you build credibility with key decision makers such that they start turning to you (or other I-O psychologists) as a respected source of expertise.
- Do your best to share what you've learned with other I-O psychologists in documentable ways. For example, be a part of an expert panel at the SIOP conference or participate in a mentoring program. If you can help an academic (professor or grad students) gain access to data, they may be able to do much of the leg work to carry out interesting research and help you publish it. This can be a way to get publications when you don't have the time or resources to conduct research yourself.
- Consider responding to an article in the *I-O Perspectives* journal about a topic you know a lot about, offering to prepare a white paper for SIOP's Visibility Committee, or working on one of the SHRM-SIOP collaborative white papers. If you can't do this much by yourself, try to get some others to help with the effort.
- Get involved in service activities related to the profession at the local or national level. There are things you can do that do not require a heavy time commitment, such as serving on a SIOP committee or volunteering to do a presentation to the group.
- Cultivate relationships with SIOP Fellows so you can build enough awareness of what you do to find people who would be willing to serve as an endorser.

Any final words of wisdom?

Don't be intimidated by the fact that you don't have a long list of publications in peer-reviewed journals. But, do be aware that you must show some evidence of how your work has impacted the field of I-O psychology in addition to any impact it has had on your clients (internal or external).

Thanks, Cheryl! This is great food for thought if you're considering applying to be a SIOP Fellow. Stay tuned for the next edition of *TIP* where we will share another practitioner journey on the road to Fellow.

Learning About Learning: The Mythical Land of L&D

Tom Whelan and Amy Duvernet

In the last handful of columns, we've talked a lot about bridging the divide between I-O and L&D. Both sides have a lot to learn from each other. However, let's not forget that L&D is not inherently populated by people who are well-versed with psychological science. Accordingly, there are some L&D professionals who hold beliefs about workplace learning that don't necessarily jibe with what we know about it from research. In this column, we'd like to talk about several "myths" about learning that we see as somewhat persistent in L&D spheres.

The 70-20-10 Rule

The "70-20-10 rule" is a principle with which many I-Os may not be familiar. There's been basically no mention of it in the peer-reviewed research literature. Why is that? Are we behind the curve? Well, not really. Here's the short origin story: in the 1980s, a research team at the Center for Creative Leadership was studying the recollections of executives about their experiences with leadership development. They came to the conclusion that leaders obtained 70% of their knowledge from job-related experiences, 20% from interactions with others, and 10% from formal educational events (Rabin, 2014). Another source sometimes cited is a Bureau of Labor Statistics paper that found between 70-90% of training is informal when people are starting a job (Lowenstein & Spletzer, 1998).

So, does 70-20-10 work as a useful heuristic? Yes. It has appealingly round numbers, it makes intuitive sense (albeit at a glance), and it was originally borne of research data. Is it a good foundation for determining specific emphasis in training? Probably not. Let's explore why.

The rule was originally based on the experiences of, and intended to apply to, leaders in organizations (Rabin, 2014). The rule's emphasis on the value of experience in the growth of leaders is not unduly warranted (e.g., McCall, 2010). But what has happened in many L&D circles is an instance of large-scale source amnesia. This "rule" has been rolled out as just that, an axiom of workplace learning that appears to deemphasize the role of formal training. The result has been a focus on knowledge and skill retention, and the role that social interactions play in sustaining what has been learned.

Most importantly, is the 70-20-10 distribution of learning really reflective of what employees think? If we're talking about the executives that the rule was originally based on, perhaps so. But we thought it might be an overreach to assume this is universally true across entire organizations. To explore this, we recently had the opportunity to ask a sample of 958 working adults across a variety of industry and job levels to reflect on what contributed to their learning at work. To mimic the 70-20-10 categorization, respondents were asked to allocate their learning between doing (e.g., on-the-job experiences); interactions with peers, coworkers, and managers; and finally, formal training provided by the company. Perhaps unsurprisingly, our findings didn't fit into the clear cut 70-20-10 division; the averages for the responses were more along the lines of 56-25-19.

This doesn't necessarily change the point of the story. On-the-job experiences are still viewed as the most important, but, despite the lower percentage, formal training is not a small, unimportant sliver of the employee experience. Instead, formal training is a critical piece of the initiative, especially when consistency and compliance are important. In fact, it's often the crucible for learning. Although on-the-job experiences are critical for learning, these experiences, in our humble opinion, actually represent "training transfer," the objective of any L&D initiative.

Thus, the 70-20-10 rule represents a heuristic that can be used to think about the context of organizational learning rather than a rule. The numbers themselves aren't terribly useful, and for as much as they are used as a calling card for talking about social and experiential learning contexts, the idea of them as a "rule" shortchanges the many, many ways that L&D can function across all sizes and shapes of companies across an array of industries.

Deliberate Practice and the "Golden Rule" of 10,000 Hours

With his 2008 book, *Outliers*, Malcolm Gladwell made popular the 10,000 hours rule: the idea that you must accumulate 10,000 hours of practice to be an expert at anything. Based on the work of Anders Ericsson and his colleagues (Ericsson, Krampe, & Tesch-Romer, 1993), the rule extrapolates from an observation made in the original research that professional musicians had, on average, accumulated 10,000 hours of practice by the time they reached age 20. As evidence of its impact, this original research has been cited 1,561 times in the PsycINFO database and 7,849 times within Google Scholar (as of 11/21/2017).

Unfortunately, the main points of both Ericsson's original work and Gladwell's reference to it have tended to get lost in translation when recounted in the popular press (e.g., [Szalavitz, 2013](#)). First, Ericsson's work did not point to a specific number of accumulated practice hours as the key factor impacting expertise. "There's really nothing magical about 10,000 hours," explained Ericsson in an [interview](#) with Freakonomics Radio (Dubner, 2016). Ten thousand hours simply represents the *average* number of hours observed for professionals, with considerable variability on either side of that number. More importantly, Ericsson's work highlights a large difference in the number of accumulated practice hours across groups of varying expertise, implying that practice is critical for success. Ericsson also highlights that, in order to be impactful, practice must be deliberate, meaning that it is focused on specific aspects of performance in order to accomplish well-defined goals. Deliberate practice should provide frequent feedback and should be mentally demanding. It is the combination of these elements that contribute to success.

In sparking this misconception around the necessity of 10,000 hours, Gladwell set himself up for a similar misinterpretation. Whereas Gladwell used the data point to make the case that because becoming an expert requires a large time commitment and thus external support, his writing has been interpreted as suggesting that in order to be an expert, you need only accumulate 10,000 hours of practice ([Gladwell, 2013](#)). In fact, in that very same chapter, he also emphasized that you must possess talent in addition to accumulating practice; his point: In order to be successful, you must be the recipient of many fortunate circumstances beyond simply possessing talent, including the kind of support that would allow you time to focus on developing your talent.

So now that we have clarified each individual's original purpose, what does the research say? A 2014 meta-analysis provides evidence that although important for some domains, the role of deliberate practice in developing expertise is only one part of the equation for success (Macnamara, Hambrick, & Oswald). This work showed that deliberate practice explained the largest (24%) amount of variance in performance when activities were highly predictable (e.g., running; $r = .49$) and far less variance (4%) when activities were less predictable (e.g., handling an aviation emergency; $r = .21$). Across domains, deliberate practice was most strongly related to gaming performance and least strongly related to professional performance. Further, methodological factors such as the operationalization of deliberate practice and performance acted as additional moderators of the relationship.

A caveat to this work is the study's operationalization of deliberate practice as accumulated hours of practice which may or may not represent *deliberate* practice. Ericsson and colleagues have limited the definition of deliberate practice to activities that meet specific conditions: supervised or guided practice

with a clearly defined task aimed to impact a clear performance goals that provides immediate feedback. Unfortunately, meta-analyses are limited to the way that variables have been measured in individual studies; to shed light on this issue, an interesting follow up would be an investigation of the moderating role of practice strategies and characteristics.

Indeed, research has shown that experts employ practice strategies that differ from those employed by individuals with less expertise; experts tend to focus on areas where they need the most improvement and exert more effort as part of their practice (Coughlan, Williams, McRobert, & Ford, 2014). Further, additional work has pointed to an optimal age at which practice begins and the importance of genetic factors, such as intelligence and specific abilities. Taken together, it appears that the jury is still out in terms of quantifying the importance of practice and determining exactly when it exerts its impact; however, it's probably safe to say that more practice is better in terms of increasing the likelihood of success. As Steve Levitt put it, "if you don't try hard, no matter how much talent you have, there's always going to be someone else who has a similar amount of talent who outworks you, and therefore outperforms you" (Dubner, 2016).

Ebbinghaus's Forgetting Curve

Across many domains in L&D, there is a lot of attention paid to sustaining the impact of training. Couched within many of these discussions is the notion of information decay in memory. Many of us have likely encountered the research of Ebbinghaus at some point, but if you're fuzzy on the details, here's a shorthand review: back in 1885, Ebbinghaus published work that reported on findings from memorizing lists of nonsense phonemes and then testing his own recall, charting the course of how long it took for him to forget items on these lists.

Given that the word lists contained words that were devoid of context and had no meaning, it wasn't a bad design to test memory decay. However, the somewhat rapid decay of bits of information with no inherent meaning has been lauded by some as proof that the impact of training is short lived at best, and without retraining one will be left with employees running around like helpless clods. The resulting chart of memory decay from Ebbinghaus's experiments is usually presented in the absence of information about his data collection methods. From this, many professionals in corporate training think that much of the information presented in training will probably be lost in a matter of days or weeks.

This ubiquitous rapid decay of *any* learned material, as we're sure you already guessed, isn't quite how things work. Although suggesting that most people have memory spans similar to the proverbial goldfish makes for a nice sales angle for some L&D products, job-relevant information simply doesn't disappear from long-term memory in the absence of retraining. There have been many studies to explore the role of retention in long-term memory (e.g., Custers, 2010). For instance, Custers and Cate (2011) found that doctors who had been out of school for years could still score up to 75% of the performance of students currently enrolled in medical school. To give an informal example, Schmidt, Peeck, Paas and van Bruekelen (2000) found that people could remember up to 60% of the street names from their childhood neighborhood compared to people still living there. Granted, most of this type of long-term retention in the context of education follows a pattern of some forgetting occurring in the space of 6 years, followed by a relatively stable permanent memory that lasts for decades (Conway, Cohen & Stanhope, 1992).

The counterargument to the myth is to highlight *why* employees will forget material. What does seem to play a significant role in forgetting, and isn't far afield from Ebbinghaus's original conclusions about memory for meaningful material, is the depth of initial learning. In the context of workplace learning, the quality of training and engagement of learners (or students) appears to govern long-term recall. Armed

with a little bit of information about depth of encoding, permastore, and very-long-term memory (though not necessarily using those words lest it come off as jargon), we can help put fears of forgetting to rest. As I-Os, we need to communicate that the reason to be concerned about the sustainment of learning isn't that people forget, but people forget when they haven't been given a good reason to remember.

Summary

We hope you've enjoyed this exploration of common myths in L&D. We'd be remiss to point out that what's underlying these "myths" isn't usually a fundamental warping of the research but a lack of exposure to the nuances of the conclusions. So, rather than knocking others over the head with the mighty hammer of empiricism, our intent here was to let I-Os know that you may encounter these ideas when dealing with some (but certainly not all) L&D professionals. However we see these myths, we have to acknowledge that some in L&D may have made a decision based on belief in them—perhaps not with the best information but certainly with good intentions. That's worth remembering; our backgrounds may differ, but our goals are still the same.

References

Conway, M. A., Cohen, G., & Stanhope, N. (1992). Very long-term memory for knowledge acquired at school and university. *Applied Cognitive Psychology*, 6, 467-482.

Coughlan, E. K., Williams, A. M., McRobert, A. P., & Ford, P. R. (2014). How experts practice: A novel test of deliberate practice theory. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 40(2), 440-458.

Custers, E. J. F. M. (2010). Long-term retention of basic science knowledge: A review study. *Advances in Health Science Education*, 15, 109-128.

Custers, E. J. F. M., & Cate, O. T. J. (2011). Very long-term retention of basic science knowledge in doctors after graduation. *Medical Education*, 45, 422-430.

Dubner, S. J. (April 27, 2016). How to become great at just about anything. *Freakonomics Radio*. Retrieved from <http://freakonomics.com/podcast/peak/>

Ebbinghaus, Hermann. (1885). *Memory: A contribution to experimental psychology*. New York, NY: Dover.

Ericsson, K. A., Krampe, R. T., & Tesch-Romer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, 100(3), 363-406.

Gladwell, M. (2008). *Outliers: The story of success*. New York, NY: Little, Brown and Co. Retrieved from <https://www.newyorker.com/news/sporting-scene/complexity-and-the-ten-thousand-hour-rule>.

Gladwell, M. (August 21, 2013). Complexity and the ten-thousand-hour rule. *The New Yorker*,

Loewenstein, M. A. & Spletzer, J. R. (1998). *Informal training: A review of existing data and some new evidence*. US Department of Labor: Bureau of Labor Statistics, Washington, DC. Available at: <https://www.bls.gov/osmr/pdf/ec940090.pdf>

Macnamara, B. N., Hambrick, D. Z., & Oswald, F. L. (2014). Deliberate practice and performance in music, games, sports, education, and professions: A meta-analysis. *Psychological Science*, 25(8), 1-11. <http://dx.doi.org/10.1177/0956797614535810>

McCall, M. W. (2010). Recasting leadership development. *Industrial and Organizational Psychology*, 3, 3-19.

Rabin, R. (2014). Blended learning for leadership: The CCL approach. Available at: <http://www.ccl.org/wp-content/uploads/2015/04/BlendedLearningLeadership.pdf>

Szalavitz, M. (May 20, 2013). 10,000 hours may not make a master after all. *Time*. Retrieved from <http://healthland.time.com/2013/05/20/10000-hours-may-not-make-a-master-after-all/>.

Schmidt, H. G., Peeck, V. H., Paas, F., & van Breukelen, G. J. P. (2000). Remembering the street names of one's childhood neighborhood: A study of very long-term retention. *Memory*, 8(1), 37-49.

**TIP-Topics for Students:
The Top 5 Challenges International Students In I-O Face and How to Overcome Them**

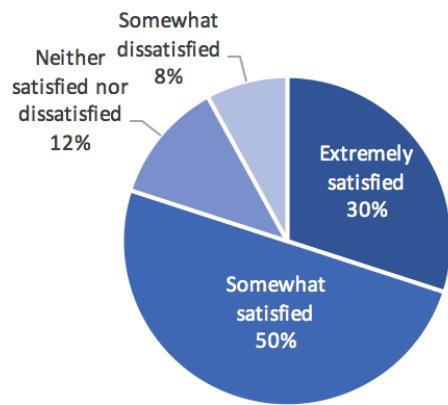
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Keywords: international students, admissions, finances, cultural adjustment, language barrier, practical knowledge, practical experience

From going through a competitive admissions process to taking advanced courses while juggling multiple responsibilities, life as a graduate student can be stressful. We all had to adjust to the increased demands associated with graduate school. For international students studying abroad on a temporary visa, this adjustment period is paired with some additional, unique challenges. As of 2015, nearly five million students globally were pursuing their higher education abroad. The majority of them were enrolled in master's or doctorate programs (The Organization for Economic Co-Operation and Development, 2017). Many international students study in a foreign language and live in countries that are culturally different from their home country. These are some common difficulties across all international students, but what about international students in I-O?

International Students' Satisfaction With Their Program



Currently, little is known about the types of challenges that international students in I-O face. In order to learn more about this population, we decided to collect some data. We developed a survey to collect both quantitative and qualitative data on international students' experiences and attitudes. The survey was distributed to the graduate programs listed on SIOP's database. A total of 61 international students completed the survey, of which 61% are currently enrolled in an I-O program and 39% completed an I-O degree. Participants stem from five continents. The majority of respondents indicated that they are extremely or somewhat satisfied with their I-O program (see graph). However, we were also able to identify five common challenges international students are facing: difficulties during the admissions process, overcoming a language barrier, adjusting to the foreign culture, financial difficulties due to visa restrictions, and insufficient practical knowledge/experience at the end of their studies.¹

After uncovering these challenges, we wanted to find ways to cope with them. We thought that one of the best resources for advice would be successful I-O psychologists who used to be international students themselves. Three faculty members agreed to help with our project: **Benjamin Elman** (Program Director, Touro College), **Christiane Spitzmueller** (Professor, University of Houston), and **Zhiqing "Albert" Zhou** (Assistant Professor, Florida Institute of Technology). Each one of them offered excellent advice that we hope will be helpful for prospective and current international students in I-O.

Admissions Process

We all had to go through a daunting admissions process. Filling out online applications, writing personal statements, ordering transcripts from past schools, submitting GRE scores, submitting résumés/CVs, and securing letters of recommendations are some common requirements of I-O programs. Ensuring that all the requirements are met and all the documents are submitted on time can be very stressful, especially for international students who have to submit additional documents regarding their immigration status. Usually, these documents need to be submitted to the International Student Office at the prospective school. As a consequence, international students frequently have to communicate with both the academic department and the International Student Office during the admissions process. Communication issues with the different departments and unclear application requirements for international students were some complaints voiced in our survey. One student mentioned that she had to send many follow-up emails to check if all the documents had been received.

“Make sure you start the application process at least 4 months before the deadline for domestic students to ascertain you get everything in place,” recommends Christiane Spitzmueller. In other words, international students require a longer lead time to prepare their application. Dr. Spitzmueller adds that international students should check the application requirements for domestic students and then follow up with the department and the international student office to see if there are any additional requirements. Albert Zhou found it helpful to get in touch with current international students in the program, especially if the students are from the same country. The program director should be able to get applicants in touch with current students. He also encourages international students to be proactive and to contact the admissions office when they are confused with any of the requirements.

Language Barrier

Most graduate programs have formal language requirements that international students need to meet in order to be considered for admissions. The requirements can vary across programs, and they are usually met by attaining a certain score on foreign language tests or by providing other documentation verifying language proficiency (e.g., a bachelor’s degree completed in the same language). Nevertheless, many international students still experience challenges related to language, especially in the early stages of their graduate studies. Some students indicated in our survey that the language barrier is one of their greatest challenges. It can be difficult to understand people when they talk at a fast pace. Language can also be a challenge for teaching, research, and writing assignments.

Unfortunately, improving language skills can take time, but there are ways to speed up the process. “I think international students should proactively push themselves out of their comfort zone,” Albert Zhou states. He adds that class and group discussions as well as class presentations are good opportunities for international students to improve their language skills. It is important to also practice outside of the classroom. Christiane Spitzmueller recommends to start watching TV upon arrival and to listen to podcasts in the local language while commuting. Reading the news and reading I-O journals in the foreign language can also be helpful. Last, international students should make sure to seek friends who are not from their home country. According to Dr. Spitzmueller: “Students who interact a lot in the foreign language adjust fast and improve rapidly.”

Cultural Adjustment

Living in a culture that is different from your own can be exciting, but it can also pose challenges. Some students experience culture shock when they move abroad due to differing values and beliefs (Wu,

Garza, & Guzman, 2015). As a result, international students often have to go through an adjustment period. In our survey, some students indicated that they are having difficulties adjusting to the local culture. They indicated that cultural differences make it difficult to network in a professional setting or to make friends with domestic students. This can result in feelings of isolation or loneliness.

Although there might be pressure to adjust to the local culture, Albert Zhou recommends to not fully succumb to it. International students should only adjust to the degree they feel comfortable in order to avoid unnecessary pressure or stress. It is not a problem if students want to maintain their cultural identity, but “they should at least understand the local culture so that cultural conflicts can be avoided.” In order to gain a better understanding of the local culture, Dr. Zhou advises students to engage in social and group activities with which they feel comfortable. Benjamin Elman believes that joining Meetup groups or sports teams are excellent ways to learn more about the local culture while also potentially developing social circles.

Financial Difficulties

Balancing a personal budget on a graduate student stipend can be tough, if you even receive one. Although most PhD programs offer some form of funding and/or tuition remission, many master’s programs do not. Students in both types of programs often need to take out student loans to afford their education. Furthermore, some students have to take on additional responsibilities during the semester (e.g., teaching extra courses) or work during the summers. For international students, the situation is even more complicated. If they are enrolled in a public university that does not offer tuition remission, they usually have to pay out-of-state tuition for the duration of their studies. International students also do not qualify for foreign student loans.

Generally, students on a student visa are permitted to work a certain number of hours on or off campus. Whether students are permitted to work off campus varies widely depending on the host country. In some countries, students have to apply for off-campus employment in the form of special work authorizations, but obtaining these temporary work authorizations can be tricky, and they are tied to specific stipulations. Some students indicated that they found it very challenging to obtain work authorization while still being enrolled in their graduate program. Others felt that they were at a disadvantage compared to domestic students in terms of receiving assistantships. Overall, lack of funding was a common challenge for the international students who took our survey.

Christiane Spitzmueller recommends going for a PhD rather than a master’s if funding is a concern because they typically come with full tuition waivers and funding. She urges international students to not seek unauthorized work. It is illegal and students could risk losing their immigration status or even face deportation. Albert Zhou recommends that students actively seek research/teaching assistant positions or other jobs on campus. “Being actively involved in research for potential grant funding opportunities can sometimes turn into financial support,” he adds. “Paid summer internships can also be helpful when they do not interfere with coursework progress.” If funding through the university is not an option, Benjamin Elman suggests that students could investigate student loan options from their home country.

Insufficient Practical Knowledge/Experience

Nearly 60% of students in our survey who are currently enrolled in a graduate program would like to pursue their careers in the country where they are currently studying. Competing with domestic students over internships and jobs can be difficult. Depending on the country, students might also have to apply for a work visa. Many international students who completed their graduate degree in I-O indicated

that securing a work visa was very challenging or even impossible. Some were forced to move back to their home country. One way to improve international students' chances to find a position abroad is to accumulate job-relevant experience and knowledge during their time in graduate school. However, some international students indicated that they did not gain sufficient practical knowledge and/or experience during their graduate studies.

Benjamin Elman suggests that international students seek unpaid positions at nonprofit organizations that they could add to their résumé. Albert Zhou also recommends that students try to seek experiences beyond what is traditionally offered by graduate programs. He offers some possible options: "Students should try to take the advantage of alumni connections, and look for potential paid/unpaid internship opportunities," and "SIOP is a good place to network and seek opportunities for job-relevant experiences. For example, SIOP has mentoring opportunities where new attendees can be paired with experienced attendees who might be able to provide job-relevant opportunities."² He also adds that coursework only provides foundational knowledge, which should be supplemented by practice and self-learning. For international students seeking an applied career, Christiane Spitzmueller recommends joining programs with applied research centers or faculty and student-run consulting practices. "I would argue that much of your research is the most meaningful applied experience," she adds. "Much of the technical expertise will transfer well to real world settings and provide as valuable of a skill set as experiences on 'actual' internships."

Conclusion

Graduate school can be stressful for any student. Navigating the admissions process, finding ways to accumulate practical experiences, and dealing with limited financial resources are struggles many of us are experiencing. International students face some additional, unique challenges in the form of language barriers, cultural adjustments, and restrictions due to their immigration status. These added challenges can make graduate school seem like an uphill battle at times, but there are ways to cope with them. A common theme throughout this article is the importance of being proactive. Establish relationships inside and outside of your program, practice the foreign language whenever you can, and search for additional funding opportunities. These are some examples of how you can be proactive, and they can make a big difference! Last, we would like to thank the international students who took the survey. We would also like to thank the I-O psychologists who offered their advice. They are excellent examples of international students who successfully pursued their careers abroad!

Notes

- ¹ Although our sample consisted primarily of international students studying in the U.S., many of the challenges students mentioned are common to international students at large.
- ² SIOP is a popular conference in the field, but depending on your geographic region you might want to consider other conferences as well. Some examples are CSIO (Canada), EAWOP (Europe), and COP (Australia). Check which conferences faculty and students in your program usually attend.

References

The Organization for Economic Co-Operation and Development. (2017). *Education at a glance 2016*. Retrieved from http://www.keepeek.com/Digital-Asset-Management/oecd/education/education-at-a-glance-2017_eag-2017-en#page302

Wu, H. P., Garza, E., & Guzman, N. (2015). International student's challenge and adjustment to college. *Education Research International*, 2015.

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International Practice Forum Special Series
Industrial-Organizational Psychology Helps Heal the World (Part 2):
Civil Society Development & Maturity: An Area for I-O Exploration

Lynda Zugec
The Workforce Consultants

Walter Reichman
Org Vitality



In this issue, we continue on our exciting new development for the International Practice Forum! With Walter Reichman (OrgVitality) and a number of I-O psychology practitioners and academics, we explore the ways in which “Industrial-Organizational Psychology Helps Heal the World.” Through a series of articles, we will present real and actionable ways in which I-O academics and practitioners have an impact in innovative and creative ways and how they have been helping to heal the world!



Civil Society Development & Maturity: An Area for I-O Exploration

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Senior Program Director, Social Impact

Organizations are complex. Every day, as I-O psychologists, we are faced with a laudable mandate—to research and address complex organizational systems, cultures, processes, and behaviors, which are deeply institutionalized, often rigid, and hard to untangle and demystify. But what happens when you compound this problem with corruption? Introduce a cross-cultural element? Introduce factors such as underpaid staff and a lackluster leadership capacity to drive the basic functions of an organization? What happens when assumptions about what we know about individual and organizational behavior are thrown out the window, and we are left with a fragile organization that is resource poor, where leaders and staff are working to meet ambitious goals with underwhelming and antiquated practices and basic systems? Such is the reality faced by many civil society organizations in the developing world. I am an I-O psychologist who works with donors and programs that often support civil society organizations and here I share my thoughts about how our field can make a difference!

The Importance of Civil Society Organizations (CSOs)

CSOs are a collection of nongovernmental organizations whose objectives typically center around the improvement of social, democratic, or economic conditions. In the civil society development setting, the concepts of organizational capacity and capabilities have been around for some time; however, the level of attention and rigor applied to this field continues to evolve. When large public-sector donor agencies like the U.S. Agency for International Development or the Department of State provide assistance to CSOs, they are often interested in relatively immediate organizational growth and sustainability. Some may want to fund CSOs that lobby for free elections in a country that historically has had irregular elections or engage with CSOs that provide the most vulnerable populations with basic services for leading a better quality of life. Regardless of purpose, these agencies and donors are constantly monitoring and tracking the CSO space. More specifically, donors are interested in the development of CSO leadership

and governance structures, human resource and financial management systems, and employee and organizational level accountability and performance. They want CSOs to succeed by often addressing and meeting their very basic needs through technical assistance, direct or indirect funding, and mechanisms that can strengthen a CSO's network. They all realize that CSOs are an important part of any country's societal fabric.

Evolution in the CSO Capacity Building Field

In this article, I want to share an illustration of the current trends in the CSO space. Over the past several decades, capacity building interventions oriented towards CSOs are evolving from transactional (Capacity Building 1.0) to a more systems-based perspective (Capacity Building 2.0). Under 1.0, capacity building interventions are generally focused on building transactional systems and efficiencies (think Maslow's basic hierarchy of needs for organizations!). The focus is on ensuring management efficiency and excellence, stronger internal systems, and a more insular strategy where the CSO is largely reactive to its environment. Over several decades of programmatic implementation, experts in the CSO space have realized that this is not enough. Providing training and coaching to leadership boards and staff on human resources, financial and procurement systems, and tightening accountability are simply insufficient to propel organizational effectiveness. The linkages and assumptions behind this approach simply do not translate into better performance. In other words, more needs to be understood and done for CSOs in countries that are often unstable, lack adequate human talent and capacity, or are not particularly open to change.

Under 2.0, recent capacity building interventions are more tailored and oriented towards supporting an organization's particular goals and capabilities with an orientation towards its environment. In Capacity 2.0, "high performance" is no longer defined in terms of management excellence or efficiency but rather by an organization achieving (or exceeding) its mission and contributing significantly to, or leading, the system in which it operates. Under this perspective, organizations are viewed as robust and dynamic entities capable of leading social change and serving as resources for weaker institutions. This refreshing perspective promotes the idea that CSOs are active in their environment and are change agents for communities and systems.

An Application of I-O Within the CSO Space

Recently, I have been working with my project team to help a client collate research on capacity development practices for CSOs and helping to develop a resource guide for program designers and managers who ultimately are interested in (a) understanding what organizational capacity entails, (b) how best to measure it, (c) tracking organizational growth over time, and, (d) identifying interventions that work to develop organizations at various levels of maturity. In this project, we have developed a repository of capacity building best practices within the CSO capacity development field including organizational clustering—where CSOs are brought together based on their organizational strengths and challenges to form cohorts, or twinning—where a partnership is established between two institutions (typically referred to as supplier and recipient organizations) with the aim of sustainably increasing the capacity of the recipient organization.

Besides identifying close to 14 types of organizational capacity development interventions, what I found fascinating was the variation in organizational solutions and effectiveness. As we matured in our project research, I helped our team to develop a conceptual framework for how one could understand organizational maturity and its complexity. We classified organizational maturity into three stages across a continuum of growth—nascent, emergent, and mature—with the understanding that CSOs vacillate along

this continuum. Weak finance and human resources internal systems alongside a transactional point of view may classify CSOs into a more nascent stage, whereas higher levels of organizational effectiveness and a systems-oriented leadership structure are indicators of a mature CSO.

Further, we developed a series of conceptual dimensions like performance focus, strategic orientation, contextual orientation, organizational innovation, measurement scope, and internal capacity and talent. Using these dimensions, we developed a 3×6 table of characteristics that nascent, emergent, and mature organizations exhibit along these dimensions. For example, nascent organizations often display limited organizational innovation and have a strong focus on internal development and efficiency. Emergent organizations may seek to maintain transactional excellence and focus on balancing internal operations and external environmental tensions. Mature organizations, on the other hand, may demonstrate exploration innovation, exercising thought leadership in their systems, and really leading transformational change in their environments. Circling back to the 14 capacity building interventions, we realized that we had stumbled upon an important point—capacity building interventions are flexible in how they can be applied to organizations and need to carefully consider the stages of organizational maturity and how CSOs are performing across the six dimensions. We concluded that a contingency-based approach to capacity building works best when classifying and working with CSOs with varying levels of capabilities and prospects.

Reflections of an I-O Psychologist

Today, the CSO space is burgeoning, and an excitement is in the air about its impact on systems, populations, and nations. In the midst of this enthusiasm, the landscape (and our project!) continues to evolve and so does my thinking on how we, as I-O psychologists, can continue to leverage and apply our expertise. Moving forward, I believe there is a tremendous opportunity in this discipline to understand how capacity building interventions influence elements like organizational culture, organizational purpose, employee performance, and leadership. Although many well-established and researched tools and metrics exist for understanding organizational capacity, the links between organizational capacity, types of capacity building interventions, and outcomes (i.e., at the individual and team levels, leadership, culture, and organizational performance)—particularly in a cross-cultural setting—remain somewhat underinvestigated. In this article, I have shared my perspectives on the important (and emerging) role that I-O can play in the international development sector and how we can apply our unique training and skill sets to further development aims through a multitude of channels. Ultimately, I-O psychologists contribute to organizational performance. In the domestic and international context, we have a wonderful opportunity to research and measure and apply our training to strengthen people, processes, organizations, and systems to ultimately improve accountability and social outcomes. Coming from the perspective of humanitarian work psychology and prosocial efforts, we have a moral imperative to contribute to a larger sense of collective good, particularly in areas that continue to receive less attention in the global arena.

To learn more: <https://socialimpact.com/portfolio-items/strengthening-civil-society-globally/>

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The Kids Are Alright: Taking Stock of Generational Differences at Work

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Discussions of the influence of generational differences—the notion that there are demonstrable dissimilarities between members of different groupings of successive birth cohorts that manifest as differences in work outcomes—are ubiquitous in both the popular business and management literature and across various topics of research in the I-O/OB/HR realm. For example, recent surveys of the “Top 10 Workforce Trends” published by SIOP since 2015 all recognize that, in some capacity, generations and the differences (that are assumed to exist) between them have some bearing on the type of work that we do as I-O psychologists (e.g., SIOP, 2016). The SIOP website has likewise featured news releases and blog postings on the topic of generational differences (e.g., SIOP, 2010; 2012). Additionally, since 2013, the APA’s “Work and Well-Being Survey” reports the results of a number of generational group comparisons for several work outcomes (e.g., work stress, job satisfaction, involvement), ostensibly as a means of demonstrating the effect that generational membership has on such outcomes (e.g., APA, 2017). Finally, in 2015, a focal article on generational differences featured in *Industrial and Organizational Psychology: Perspectives on Science and Practice* invited commentary on ideas surrounding generational differences at work (Costanza & Finkelstein, 2015).

Although these observations do speak to the emergence and popularity of thinking about generational differences in our field, we face an important question when considering the broader implications of this phenomenon: “What influence does the notion of generational differences *actually* have on those processes that we care about as I-O researchers and practitioners?” Here, we take a balanced look at this question, with the hope of providing some practical guidance to I-O researchers and practitioners about how to address the topic of generational differences in their own work. Although increasingly popular, the notion of generational differences is not without its critics. Our own work on this topic has generally called into question a number of the assumptions made by both theories of generations and research that has purported to study differences between generations (Rudolph, 2015; Rudolph, Rauvola, & Zacher, 2017; Rudolph & Zacher, 2015; Rudolph & Zacher, 2017a, 2017b; Zacher, 2015). Through our research, writing, and discussions with colleagues—both academics and practitioners—it is clear to us that this topic can be quite divisive. People tend to take a hard line on their opinions regarding the existence (or nonexistence) of generations and the assumed differences between them. We would argue that it is precisely this divisiveness that makes this topic of particular importance to explore and critique. To further this conversation, we next consider two competing positions suggesting, on the one hand, that generational differences matter, and on the other hand, that they do not.

Arguments in Favor of Generational Differences

Generations as a construct for empirical study emerged from functionalist sociological theories in the early-to-mid 20th century (e.g., Mannheim, 1927/1952; Ryder, 1965). These early sociological theorists sought an explanation for aggregate-level changes that are experienced by societies over time (e.g., political movements), and the notion of generation-to-generation shifts in attitudes and values was introduced to explain such changes. From a functionalist sociological lens, each new generation (i.e., in the sense of the lineage of successive birth cohorts from year to year) brings facets of their unique expe-

riences to bear on the problems faced by their society. Accordingly, when considered in the aggregate (i.e., across members of a given birth cohort), the collective experiences of each generation serve to shape how social changes unfold within a given society at a particular point in time (see Kertzer, 1983, for a review of these early perspectives).

Related perspectives on generations are, to some extent, reflected in early writings in developmental psychology, which address the possibility that societal influences shape the nature of human development. For example, in 1904, G. Stanley Hall suggested: "Never has youth been exposed to such dangers of both perversion and arrest as in our own land and day" (Vol. I, p. 15). The adoption of the generations perspective by the IO/OB/HR literature can likewise be traced across time. Indeed, generational differences have long been invoked to explain changes in work-relevant attitudes, behaviors, and motives (e.g., Smola & Sutton, 2002). For example, there are early references to the role of generational differences and the influence of "generation gaps" in leadership and management phenomena (e.g., DeSalvia & Gemmill, 1971; Diamant, 1960; Paul & Schooler, 1970). More than 20 years ago, Tulgan (1995) offered guidance regarding "managing Generation X." More recently, Schein (2004) discusses the role of generations in transmitting culture within organizations. A recent edited volume of academic works has likewise been dedicated to exploring these and related issues (Burke, Cooper, & Antoniou, 2015).

Arguments in favor of generational differences often cite the observation that the workforce and/or the workplace are changing at a rapid pace, and it would be difficult to refute either of these points. The workforce, and hence organizations, are becoming increasingly age diverse (Rudolph, Marcus, & Zacher, in press). The way in which work is being done is changing, and the nature of the work itself is changing concurrently (e.g., Frese, 2000). In research, theories of generational differences are often invoked to explain such changes, either as an antecedent to change (e.g., generational differences explain differentiated career patterns; Lyons, Schweitzer, & Ng, 2015) or as a reflection of change itself (e.g., members of different generations react differently to economic recessions; De Hauw & De Vos, 2010). Regardless of the how generations are invoked (i.e., as an antecedent or consequence of change), generational differences research is typically grounded in the aforementioned sociological notion that growing up in a certain time and place systematically and predictably shapes the attitudes, values, and ultimately the behaviors of the members of different generational cohorts.

Extending this research to I-O/OB/HR practice, advice is often given on how to best manage generational differences in the workplace. A casual stroll through any airport bookstore reveals a variety of popular-press books that exist and speak to these and related ideas (e.g., Espinoza & Ukleja, 2016). Also speaking to applications, a Google search for the phrase "managing generational differences" offers nearly 20,000 results, ranging from summaries of best practices for managing workers of different generational groups to elaborately developed, off-the-shelf training programs that likewise focus on preparing managers to apply such practices to their own multigenerational workforces.

Given the ubiquity of and weight placed upon the notion of generational differences in the popular business and management literature, it is somewhat surprising how little empirical research is actually conducted on generational differences at work (e.g., a comprehensive meta-analysis of this literature from 2012 by Costanza, Badger, Fraser, Severt, & Gade only considered $K = 20$ studies). Although this lack of research is likely due in part to the various methodological hurdles associated with this area of inquiry (reviewed in some detail later in this piece), a recent special issue of *Work, Aging and Retirement* includes several important conceptual and empirical advances that inform this area of study (See Costanza & Finkelstein, 2017). Beyond generational differences, organizational researchers have focused on related generation-like phenomena, for example generational identity at work (e.g., Joshi, Dencker,

Franz, & Martocchio, 2010) and the value of intergenerational exchanges in the workplace (e.g., Henry, Zacher, & Desmette, 2015).

Recently, proponents of generational differences have offered that generational categories are a useful means of understanding how sociocultural phenomena manifest as age-related differences that can influence individual level behaviors. For example, according to Twenge (2017, p. 6):

Any generational cutoff is arbitrary; there is no exact science or official consensus to determine which birth years belong to which generation. [...] Nevertheless, generational labels with specific cutoffs are useful...they allow us to define and describe people despite the obvious limitations of using a bright line when a fuzzy one is closer to the truth.

The contemporary understanding of generations offered by Twenge (2017) reflects the social-constructivist perspective on generational differences that we have proposed and discussed elsewhere (e.g., Rudolph & Zacher, 2015; 2017a). Specifically, this perspective acknowledges that generations (and hence, differences between them) do not really exist in an objective sense; rather, they are socially constructed to explain the complexities of changing societies against the intricacies of human development that we observe on a day-to-day basis and particularly when interacting with people of different ages and life stages. From a social-constructivist perspective, thinking in terms of generations is useful for making a complex issue (i.e., aging) less complex and giving meaning to observations and perceptions of age-related differences that we witness via social interactions.

Arguments Opposed to Generational Differences

Critics of generational differences applied to the study of work often suggest that the focus on such differences in both research and practice is more indicative of a “management fad” (i.e., a fashionable and novel-yet-unsubstantiated idea, see Abrahamson, 1991, 1996; Røvik, 2011) than an empirically discernable phenomenon. Such critiques are based on a number of logical, empirical, and methodological concerns that have been noted in research that purports to study generations and generational differences.

From a logical perspective, applying generational theorizing to elucidate work-related phenomena represents a top-down, deterministic (i.e., in that it assumes that all members of a given generation “act” in the same way) and reductionist (i.e., a great deal of nuance is lost when distilling otherwise complex aging phenomena into simpler “generational” units) way of explaining behavior. Furthermore, the application of generational explanations involves exploring relationships among variables defined and measured at different conceptual levels of analysis (i.e., generations are typically defined at the group level, and work outcomes at the individual level). As such, generations research begets the possibility of committing either atomistic (i.e., inferences regarding variability across groups based on individual level data) or ecological (i.e., inferences regarding phenomena at the individual level on the basis of group level data) fallacies. As discussed further below, the latter fallacy is of particular concern to various cross-temporal methods that are often used to study generational differences phenomena (e.g., Twenge, Campbell, Hoffman, & Lance, 2010; Wegman, Hoffman, Carter, Twenge, & Guenole, in press).

From an empirical perspective, there is meager evidence to support the existence of generational differences phenomena. The aforementioned meta-analysis by Costanza et al. (2012) failed to find support for generational differences across a number of work outcomes, and a recent qualitative review by Stassen, Anseel, and Levecque (2016) triangulates this conclusion. Another recent meta-analysis found no generational differences in work-ethic endorsement (Zabel, Biermeier-Hanson, Baltes, Early, & Shepard,

2017). A review on generational differences in the workplace by Lyons and Kuron (2014) concluded that “evidence has been sparse for some variables and inconsistent for others. There remains a great deal of variation in methodologies and reporting of findings, making it difficult to draw definitive conclusions from the research” (p. S153). Additionally, our recent review of the leadership and generations literature (Rudolph, Rauvola, & Zacher 2017) likewise failed to find compelling support that generational differences are present in leadership-related phenomena.

Beyond the results of these quantitative and qualitative reviews of this literature, it is also important to recognize that the means of assessing generational effects via statistical methods has important implications to this area of study. To this end, in a study applying various common statistical models for analyzing data for the presence of generational differences, Costanza, Darrow, Yost, and Severt (2017) find that these methods do not converge with one another. This suggests that any conclusions one could draw regarding generational differences are, in part, dependent upon the statistical approach to analysis. We think this to be a troubling observation, indeed. Recently, among otherwise staunch proponents of generational differences, doubt has been cast upon generations as they have been understood in organizational research (i.e., Campbell, Twenge, & Campbell, 2017, described generations as “fuzzy social constructs”).

Finally, methodologically, generational differences research typically uses single time point (i.e., cross-sectional) research designs. Cross-sectional methods cannot be used to address questions about generations, because of the conflation of chronological age, contemporaneous period, and birth cohort effects—each of which is confounded with another in such designs. As a simple example of this confounding phenomenon, consider that if the current year is known (e.g., 2017) along with one’s age (e.g., 35), then their birth cohort is determined (i.e., 1982). In a single time point study, the year of data collection is (most typically) held constant. Thus, conclusions drawn with respect to birth cohort effects (i.e., which are usually offered as evidence of generational differences) could be due to either birth cohort or chronological age; each is equally likely to be the (assumed causal) mechanism at play. From this, it is up to theory to parse these confounded sources of variance. Thus, cross-sectional methods cannot draw valid conclusions about generational differences.

So-called cross-temporal methods (e.g., Twenge et al., 2010) have also been advanced to circumvent to some degree the problems of age-period-cohort confounding. However, these methods are likewise burdened with the same concerns over confounding of cohort and period effects and a reliance on inferences based upon ecological relationships. More specifically, cross-temporal methods hold age constant across time (e.g., looking at independent samples of 35 year olds, sampled in 1990, 2000, and 2010). In holding age constant, cohort and period effects are confounded with one another, such that each are equally likely causes of observed variation, and it is again up to theory to parse their unique effects. Thus, just like cross-sectional methods, cross-temporal methods cannot draw valid conclusions about generational differences. Furthermore, because cross-temporal methods draw inferences on the basis of correlations between group-level phenomena, they present a special case of the ecological correlation—a long acknowledged statistical misspecification (see Robinson, 1950).

To our knowledge, nearly every study of generational difference effects in work outcomes has adopted either a cross-sectional or cross-temporal methodology (c.f., Kowske, Rasch, & Wiley, 2010). Given the limitations of each of these methodologies for studying generational differences that we have noted here (and, if we abstract these ideas to an admittedly extreme position), it could be argued that there has never actually been an empirical study of generational differences in work outcomes! Importantly, even if research were to adopt developmental psychology’s “gold standard” cohort-sequential research

design (i.e., a type of longitudinal design in which different birth cohorts are sampled over several years or even decades, see Baltes, 1968) and use advanced cross-classified mixed effects modeling procedures (e.g., Kowske, et al., 2010), a number of the logical and statistical problems associated with studying generations (e.g., arbitrary age boundaries, ecological fallacies, noncausal parameters, endogeneity) would still remain.

Conclusions

We originally posed the question, “What influence does the notion of generational differences *actually* have on those processes that we care about as I-O researchers and practitioners?” To further contextualize our previous discussion and answer this question, we now consider the conclusions that we can draw from the available evidence. Holding back the logical and methodological arguments against generational differences and at the risk of being polemic and/or dismissive, we would suggest that there currently is not sufficient empirical evidence for generational differences to warrant all of the attention that this idea receives in research and practice. Moreover, when considering the paucity of evidence supporting the existence of generational differences in work outcomes *and* the logical and methodological arguments that limit our ability to define their existence, this position is even further cemented. In terms of practical guidance, we would strongly caution against applying generational differences to explain noted shifts in work-related processes, broadly defined. In our work, we have thus called for a moratorium to be placed on research on generations and generational differences, and suggested adopting a more differentiated lifespan developmental perspective on age-related phenomena (e.g., Rudolph & Zacher, 2017a, b). The lifespan perspective for which we have advocated conceptualizes individual development as a continuous, multidimensional, and multidirectional process that is influenced by normative and idiosyncratic individual and contextual factors (Baltes, 1987). To further advance our position, Table 1 offers four pieces of practical (and actionable) advice for how to begin adopting such a lifespan perspective. In closing, we recognize that generational differences do provide a convenient wrapper for more complex age-based explanations. However, we would argue that with respect to generational differences, this convenience accompanies a litany of expenses that cancel out their expediency.

Table 1
Four Ways to Adopt a Lifespan Perspective on Aging at Work

1. Recognize age-related changes in abilities (e.g., physical and cognitive capacities) and the impact that such changes bring to bear on job performance and related outcomes (e.g., work motivation).
2. Understand age-related difference in life situations (e.g., temporal shifts in work versus nonwork roles and their associated demands) and offer age-conscious policies and provisions to support the work-life interface (e.g., family care, including childcare and eldercare; flexible time and place policies)
3. Acknowledge temporal dynamics in individual differences (e.g., the age-graded reorganization of personality and motives; the accrual of tacit and explicit job knowledge and related job skills) and how these dynamics influence various work processes and outcomes.
4. Advocate for the design of work systems that optimally integrate various age-related changes, differences, and dynamics (e.g., institute complete-task job design to promote long term well-being and performance; afford workers the latitude to proactively self-manage work tasks and responsibilities via job crafting)

References

APA. (2017, May 24). 2017 Work and Well-Being Survey. Retrieved from: http://www.apaexcellence.org/assets/general/2017-work-and-wellbeing-survey-results.pdf?_ga=2.234282266.563601534.1506900184-1206449101.1490975377

Abrahamson, E. (1991). Managerial fads and fashions: The diffusion and rejection of innovations. *Academy of Management Review, 16*, 586–612. doi:10.2307/258919

Abrahamson, E. (1996). Management fashion. *Academy of Management Review, 21*, 254–285. doi:10.5465/AMR.1996.9602161572

Baltes, P. B. (1987). Theoretical propositions of life-span developmental psychology: On the dynamics between growth and decline. *Developmental Psychology, 23*(5), 611.626.

Bennett, M. M., Beehr, T. A., & Ivanitskaya, L. V. (2017). Work-family conflict: differences across generations and life cycles. *Journal of Managerial Psychology, 32*(4) 314-332. doi: 10.1108/JMP-06-2016-0192

Burke R. J., Cooper C. L., & Antoniou A. S. (2015). The multi-generational and aging workforce: Challenges and opportunities. Edward Elgar, Cheltenham, England.

Campbell, S. M., Twenge, J. M., & Campbell, W. K. (2017). Fuzzy but useful constructs: Making sense of the differences between generations. *Work, Aging and Retirement, 3*, 130–139. 10.1093/workar/wax001

Costanza, D. P., Badger, J. M., Fraser, R. L., Severt, J. B., & Gade, P. A. (2012). Generational differences in work-related attitudes: A meta-analysis. *Journal of Business and Psychology, 27*, 375–394. doi:10.1007/s10869-012-9259-4

Costanza, D. P., Darrow, J. B., Yost, A. B., & Severt, J. B. (2017). A review of analytical methods used to study generational differences: Strengths and limitations. *Work, Aging and Retirement, 3*, 149–165. doi:10.1093/workar/wax002

Costanza, D. P., & Finkelstein, L. M. (2015). Generationally based differences in the workplace: Is there a there there? *Industrial and Organizational Psychology, 8*(3), 308-323. doi: 10.1017/iop.2015.15

Costanza, D. P., & Finkelstein, L. M. (2017). Generations, Age, and the Space Between: Introduction to the Special Issue. *Work, Aging and Retirement, 3*(2), 109-112. doi: 10.1093/workar/wax003

DeSalvia, D. N., & Gemmill, G. R. (1971). An exploratory study of the personal value systems of college students and managers. *Academy of Management Journal, 14*, 227–238. doi: 10.2307/255309

Diamant, A. (1960). The relevance of comparative politics to the study of comparative administration. *Administrative Science Quarterly, 5*, 87–112. doi:10.2307/2390826

Espinoza, C., & Ukleja, M. (2016). *Managing the millennials: Discover the core competencies for managing today's workforce (2nd edition)*. New York, NY: John Wiley & Sons.

Frese, M. (2000). The changing nature of work. In N. Chmiel (Ed.), *Introduction to work and organizational psychology* (pp. 424–439). Oxford, UK: Blackwell.

Hall, G. S. (1904). *Adolescence: Its psychology and its relations to physiology, anthropology, sociology, sex, crime, religion, and education* (Vols. I & II). New York, NY: D. Appleton & Co.

Henry, H., Zacher, H., & Desmette, D. (2015). Reducing age bias and turnover intentions by enhancing intergenerational contact quality in the workplace: The role of opportunities for generativity and development. *Work, Aging and Retirement, 1*(3), 243-253. doi: 10.1093/workar/wav005

Joshi, A., Dencker, J. C., Franz, G., & Martocchio, J. J. (2010). Unpacking generational identities in organizations. *Academy of Management Review, 35*(3), 392–414. doi: 10.5465/AMR.2010.51141800

Kertzer, D. I. (1983). Generation as a sociological problem. *Annual Review of Sociology, 9*, 125–149. doi:10.1146/annurev.so.09.080183.001013

Kowske, B. J., Rasch, R., & Wiley, J. (2010). Millennials' (lack of) attitude problem: An empirical examination of generation effects on work attitudes. *Journal of Business and Psychology, 25*(2), 265-279. doi: 10.1007/s10869-010-9171-8

Lyons, S., & Kuron, L. (2014). Generational differences in the workplace: A review of the evidence and directions for future research. *Journal of Organizational Behavior, 35*, S139–S157. doi:10.1002/job.1913

Lyons, S. T., Schweitzer, L., & Ng, E. S. (2015). How have careers changed? An investigation of changing career patterns across four generations. *Journal of Managerial Psychology, 30*(1), 8-21. doi: 10.1108/JMP-07-2014-0210

Mannheim, K. (1952). The problem of generations. In P. Kecskemeti (Ed.), *Essays in the sociology of knowledge* (pp. 276–322). Boston, MA: Routledge & Kegan Paul. (Original work published 1927)

Paul, R. J., & Schooler, R. D. (1970). An analysis of performance standards and generation conflict in academia. *Academy of Management Journal*, 13, 212–216. doi: 10.2307/255109

Robinson, W. S. (1950). Ecological correlations and the behavior of individuals. *American Sociological Review*, 15, 351–357. doi:10.2307/2087176

Røvik, K. A. (2011). From fashion to virus: An alternative theory of organizations' handling of management ideas. *Organization Studies*, 32, 631–653. doi: 10.1177/0170840611405426

Rudolph, C. W. (2015). A note on the folly of cross-sectional operationalizations of generations. *Industrial and Organizational Psychology*, 8, 362–366. doi: 10.1017/iop.2015.50

Rudolph, C. W., Marcus, J., & Zacher, H. (in press). Global issues in work and aging. In K. Shultz & G. Adams (Eds.), *Aging & work in the 21st century, 2nd edition*. New York, NY: Routledge/Psychology Press.

Rudolph, C. W., Rauvola, R.S., & Zacher, H. (2017). Leadership and generations at work: A critical review. *Leadership Quarterly*. Advance online publication, <https://doi.org/10.1016/j.lequa.2017.09.004>

Rudolph, C. W. & Zacher, H. (2015). Intergenerational perceptions and conflicts in multi-age and multigenerational work environments. In L. Finkelstein, D. Truxillo, F. Fraccaroli, F., & R. Kanfer (Eds.), *Facing the challenges of a multi-age workforce: A use-inspired approach* (pp. 253–282). SIOP Organizational Frontier Series. New York, NY: Psychology Press.

Rudolph, C. W., & Zacher, H. (2017a). Considering generations from a lifespan developmental perspective. *Work, Aging and Retirement*, 3, 113–129. doi: 10.1093/workar/waw019

Rudolph, C. W., & Zacher, H. (2017b). Myths and misconceptions about leading generations: Setting the record straight. In T. A. Scandura & E. Mouríño (Eds.), *Leading diversity in the 21st century* (pp. 243–278). Charlotte, NC: Information Age Publishing.

Ryder, N. B. (1965). e cohort as a concept in the study of social change. *American Sociological Review*, 30, 843–861. doi:10.2307/2090964

Schein, E. H. (2004). *Organizational culture and leadership* (3rd ed.). San Francisco, CA: Jossey-Bass.

SIOP. (2010, June 9). *Millennials on a mission: SIOP members' research finds Gen Y Employees more motivated to learn and use training than Gen Xers*. Retrieved from: http://www.siop.org/Media/News/gen_y.aspx

SIOP. (2012, July 18). *Studying Generation C in the workplace*. Retrieved from: http://www.siop.org/article_view.aspx?article=994

SIOP. (2016, December 20). SIOP Announces Top 10 Workplace Trends for 2017. Retrieved from: http://www.siop.org/article_view.aspx?article=1610

Smola, K., & Sutton, C. D. (2002). Generational differences: Revisiting generational work values for the new millennium. *Journal of Organizational Behavior*, 23, 363–382.

Stassen, L., Anseel, F., & Levecque, K. (2016). Generatieverschillen op de werkvloer: Een systematische analyse van een mythe [Generational differences in the workplace: A systematic analysis of a myth]. *Gedrag & Organisatie*, 29, 86–92.

Tulgan, B. (1995), *Managing generation X: How to bring out the best in young talent*. Santa Monica, CA: Merritt Publishing Company.

Twenge, J. M. (2017). IGen: Why today's super-connected kids are growing up less rebellious, more tolerant, less happy--and completely unprepared for adulthood--and what that means for the rest of us. New York, NY: Simon and Schuster.

Twenge, J. M., Campbell, S. M., Hoffman, B. J., & Lance, C. E. (2010). Generational differences in work values: Leisure and extrinsic values increasing, social and intrinsic values decreasing. *Journal of Management*, 36(5), 1117–1142. doi: 10.1177/0149206309352246

Wegman, L. A., Hoffman, B. J., Carter, N. T., Twenge, J. M., & Guenole, N. (in press). Placing job characteristics in context: cross-temporal meta-analysis of changes in job characteristics since 1975. *Journal of Management*. doi: 10.1177/0149206316654545

Zacher, H. (2015). Using lifespan developmental theory and methods as a viable alternative to the study of generational differences at work. *Industrial and Organizational Psychology*, 8, 342–346. doi: 10.1017/iop.2015.47

Zabel, K. L., Biermeier-Hanson, B. B., Baltes, B. B., Early, B. J., & Shepard, A. (2017). Generational differences in work ethic: Fact or fiction? *Journal of Business and Psychology*, 32(3), 301–315. doi: 10.1007/s10869-016-9466-5

Revisiting the 2016 SIOP Income & Employment Survey: Gender Pay Gap

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The focus on gender equality in the workplace—particularly around gender and pay—continues to be a topic of interest in popular press (e.g., Veira, 2017) and research (e.g., Leslie, Manchester, & Dahm, 2017). The field of I-O psychology is not exempt from this troubling issue. The SIOP 2016 Income and Employment Report found that although the gender pay gap continues to close, with the income ratio improving from 87.9% in 2012 to 89.7% in 2015, there is still a gender-based difference in pay (Poteet, Parker, Herman, DuVernet, & Conley, 2017). SIOP's own Institutional Research Committee, which is now responsible for the SIOP Income and Employment Survey, has continued to explore the data from the 2016 survey to better understand the relationship between gender and pay within the I-O community.

Despite notable strides made towards gender equality in the workplace, men and women are still not paid equally. According to data from the United States Census Bureau, women earned, on average, only 80% of what men earned in 2015 (Proctor, Semega, & Kollar, 2016). Although the gap has narrowed since 1960, the rate at which the gap is closing has slowed (American Association of University Women, 2017). This gap is at its widest approximately 15–20 years after individuals enter the workforce and, interestingly, is wider for college graduates than those who did not graduate college. Women who are married and/or have small children are particularly affected (Goldin, Kerr, Olivetti, & Barth, 2017). Given our research and focus on the workplace, we expect our field may not be as susceptible to gender inequality as other fields. Indeed, as reported in our recent salary survey (Poteet et al., 2017), I-O psychologists of different genders enjoy a more comparable salary than individuals in other fields. Still, understanding the extent to which such a gap exists within various career paths in the field of I-O psychology, and the predictors of this gap, is an important first step in improving pay equity in our profession.

Research on the Gender Pay Gap

The process by which the gender pay gap is created may begin as soon as a formal job offer is made. Leibbrandt and List (2015) found that women were less likely than men to negotiate for higher pay when there was no specific mention made of salary being negotiable. However, when there was explicit mention of salary being negotiable, women were just as likely as men to negotiate for higher pay. In a survey of undergraduate students, Hogue, DuBois, and Fox-Cardamone (2010) discovered that women had lower expectations than did men about their entry-level pay and their peak career pay. Interestingly, both men and women who planned on entering female-dominated occupations expected to earn less than did those (of both genders) who planned on entering male-dominated occupations, although this difference was more pronounced for women than for men.

Authority level may also play a role in salary differences. A study of chief procurement officers found that women in this position were paid less than men, had fewer supervisory responsibilities, and controlled fewer resources. The authors argued that these differences could be explained by authority level; women had less authority than men, and lower authority was related to lower pay (Alkadry & Tower, 2011).

There are situations, however, in which women are not paid less than men. Among individuals holding graduate degrees, within-major pay differences are generally nonexistent, possibly because graduate degrees tend to be more closely linked to job opportunities (Morgan, 2008). Particularly in organizations

with diversity goals, high-potential women may be seen as important to advancing those goals, and in such situations these women may be paid more than men for comparable positions (Leslie et al., 2017).

The field of I-O psychology has several characteristics which may serve to minimize the pay gap between men and women. Most I-O psychologists hold graduate degrees, and as noted by Morgan (2008), the pay gap between genders is nearly nonexistent for those holding graduate degrees. Additionally, although psychology as a whole is generally perceived as being a female-dominated field, I-O psychology was until quite recently a male-dominated field, as evidenced by the gender breakdown of salary survey respondents over time (see Poteet et al., 2017). However, other relevant factors, such as women being less likely to negotiate at the outset of a job when there is no explicit invitation (Leibbrandt & List, 2015) and the “motherhood penalty,” whereby women with children are paid less (Lips & Lawson, 2009) may still affect pay equity within I-O psychology.

Survey Background

The [2016 Income and Employment Report](#) provides a detailed investigation of the latest SIOP salary survey data collection effort and results, but readers looking for a high-level overview of the survey (and results) may want to turn to the [TIP article published in winter 2017](#) (DuVernet, Poteet, Parker, Conley, & Herman, 2017). The survey was administered in the summer of 2016, with questions focused on SIOP members’ responses to questions about compensation and work experience from 2014 and 2015. In the current article, we conducted additional analyses to investigate the presence (or lack thereof) of gender differences in pay and work experiences along with potential causes for such differences.

There were 1,120 usable responses from the survey, with female respondents making up 49% of the total responses. We focused on those who indicated they were full-time employees, resulting in 1,069 respondents. (For more details on sample characteristics, see [2016 Income and Employment Report](#).)

Does SIOP Have a Gender Pay Gap?

Unfortunately, results point to the presence of a gender pay gap within the field of I-O psychology. Both median and mean differences across genders were significant. Male respondents reported earning 11.5% higher median incomes and 17.7% higher mean incomes. Specifically, the mean income for male respondents was \$138,873, whereas the mean reported income earned by female respondents was \$117,985 ($t(1,056) = 4.093, p < .001$).

Table 1 below presents descriptive statistics for men’s and women’s incomes in 2015. These results provide further insight into gender income disparities. Consistent with the calculation method employed by the United States Bureau of Labor Statistics, the ratio of women’s median income to men’s median income was used to examine earning equality across genders. Interestingly, the differences in incomes at the 10th and 25th percentiles are relatively small (favoring women at the 10th percentile). Beginning at the 50th percentile and continuing up, the differences become increasingly larger. Thus, it appears that it is at the mid to upper levels of income where gender income differences become more pronounced. Income increases as I-O psychologists advance in their careers, but the gender pay gap appears to be more pronounced at higher levels of pay.

Table 1
Descriptive Statistics for 2015 Primary Incomes by Gender

	Male	Female
Number	536	522
Mean income	\$138,873	\$117,985
Median income	\$116,779	\$104,750
Female to male income ratio:	89.7%	
Percentile:		
90 th	\$220,431	\$182,400
75 th	\$165,000	\$137,813
50 th	\$116,779	\$104,750
25 th	\$85,000	\$82,000
10 th	\$65,000	\$66,000

In what SIOP Subgroups Do We See the Greatest Gender Pay Gap?

To better understand where the differences arise, we parsed the data to examine potential moderators of the gender pay gap. Figure 1 shows gender differences in median salary across different levels of experience. These data are somewhat consistent with research demonstrating that the largest gap in pay between genders occurs 15–20 years postgraduation (Goldin et al., 2017); SIOP members with 15–19 years of experience showed the second largest gender pay gap. However, the largest gender pay gap in our sample was among those respondents with more than 30 years of I-O-related experience. Salary increases as I-O psychologists advance in their careers, and it seems the gender pay gap becomes more pronounced as this increase occurs.

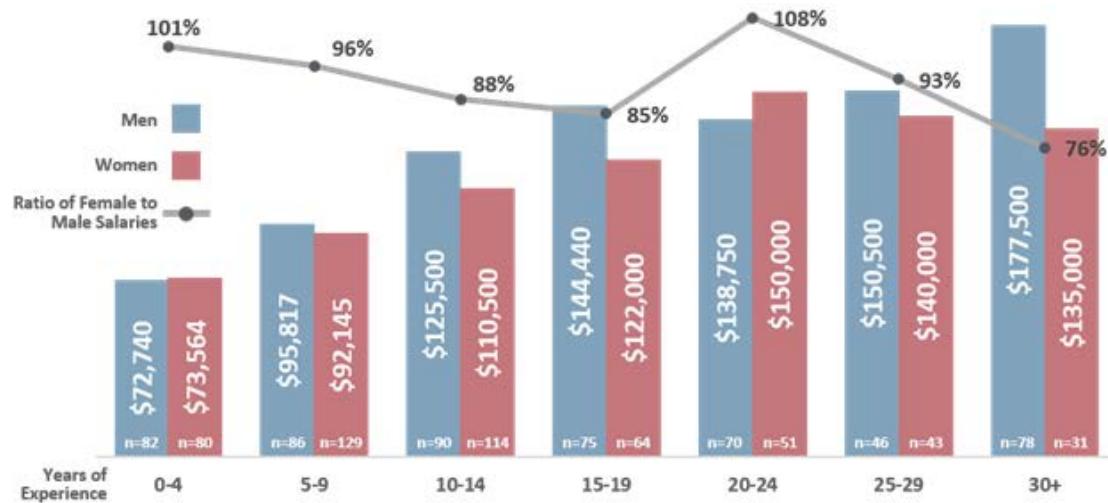


Figure 1. Impact of Experience on I-O Psychologist Gender Pay Gap

Figure 2 parses the 2015 base salary data by gender and industry. Within the academic subsample, we break the data up by the two most common department types, psychology and business/management. Within the practitioner subsample, we parsed the data by the four most frequent types of employers. A few patterns are interesting to note here. First, within those employed in academic settings, there appears to be a much larger gender pay gap in business/management departments compared to psychology departments. Second, among practitioners, those working for consulting firms reported the largest gap, whereas those working for nonprofits reported the smallest gap.

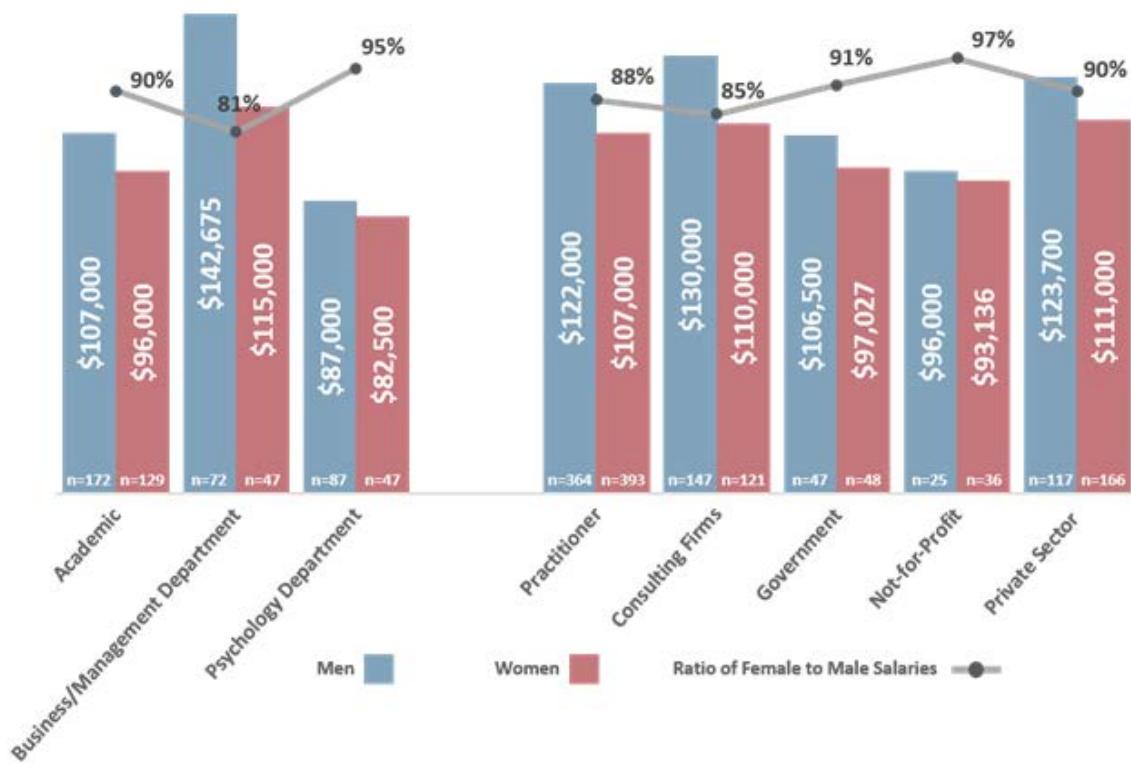


Figure 2. Impact of Career on I-O Psychologist Gender Pay Gap

Figure 3 compares the ratio of female to male salary across the five locations where we see the highest concentration of SIOP members. Of particular note, female I-O psychologists in Washington, DC reported a higher median salary than male I-O psychologists in that area.

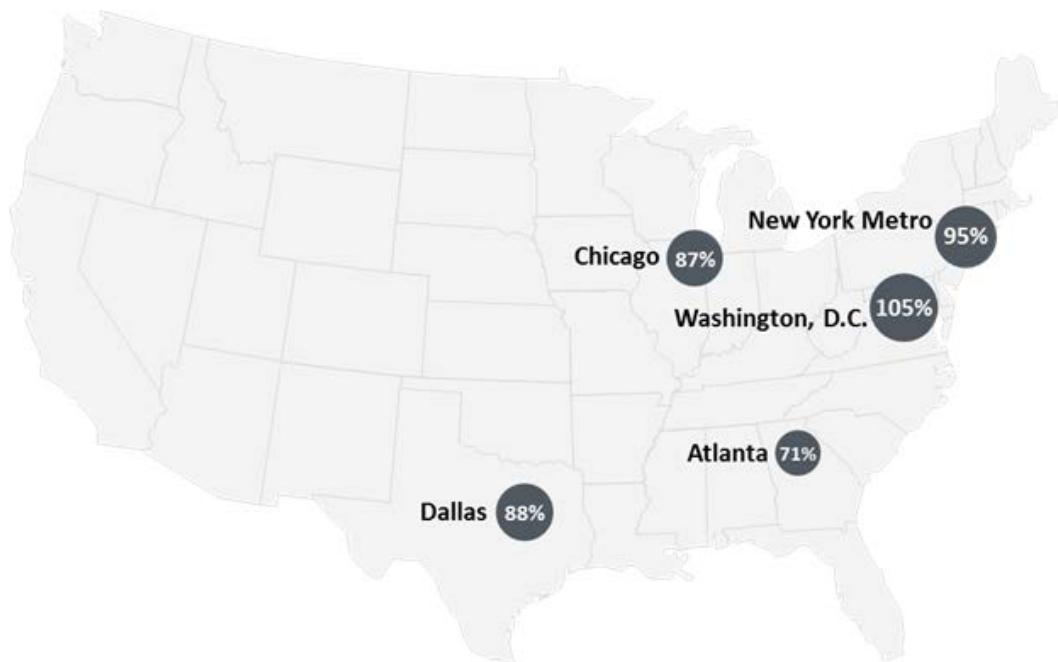


Figure 3. Impact of Location on I-O Psychologist Gender Pay Gap

Can the Gender Pay Gap Be Explained by Other Drivers of Salary?

After examining the pay gap across the different subgroups highlighted above, we sought to investigate the extent to which the SIOP gender pay gap may be explained by other factors known to predict salary — namely, experience, authority, and education. These analyses were limited to individuals who indicated full-time employment, with a focus on variables that were applicable to the entire sample (e.g., PsyD vs PhD would only apply to those with doctorates). Using hierarchical regression analysis (see Table 2), we first estimated the extent to which years of I-O-related work experience, number of employees managed or supervised, and I-O degree (master's vs. PhD) predicted 2015 base salary. Each of these predictors was significantly related to salary ($F(3,1036) = 98.15$, $p < .001$), and the combination of these predictors explained 22% of the variance in salary. After controlling for these variables, gender was added to the model to determine the extent to which it was predictive of salary above and beyond the known predictors of salary. Gender continued to significantly predict salary ($F(4,1036) = 75.33$, $p < .001$); however, it only accounted for an additional 0.40% of the variance, indicating that gender may only explain a small portion of the variance in SIOP member salaries once other drivers of pay are taken into account. (It's worth noting that we did not include academic vs. practitioner in our analyses because it was found to have a low correlation ($r = .09$)).

Table 2
Summary of Hierarchical Regression Analysis Variable Predicting Salary

Variable	B	SE B	β
Step 1			
Years of work experience in I-O psychology or related field	2801.34	240.87	.34**
Number of employees managed or supervised	1317.29	167.43	.22**
Master's vs. PhD	22139.42	5701.35	.11**
Step 2			
Years of work experience in I-O psychology or related field	2713.79	243.19	.33**
Number of employees managed or supervised	1316.82	167.07	.22**
Master's vs. PhD	22377.07	5689.70	.11**
Gender	-10995.05	4663.29	-.07*

Note. $R^2 = .22$ for Step 1; $\Delta R^2 = .004$ ($p < .05$).

* $p < .05$. ** $p < .01$.

Likely due to the fact that the number of females in I/O psychology has increased steadily over time, males in our sample reported higher levels of experience than females (16.35 years for males; 13.13 years for females; $t(1001.30) = 5.18$, $p < .001$; $d = 0.32$). We therefore thought it important to determine the extent to which differences in work experience might explain the gender differences in pay. To investigate this, we tested the direct and indirect effects (through work experience) of gender on salary using the procedures suggested by Preacher and Hayes (2004). The relationship between gender and salary was partially mediated by years of work experience (CI₉₅ for indirect effect: -15,405.67, -6,245.01). The ratio of the indirect effect to the total effect was 0.49, suggesting that about 49% of the gender gap in salary can be explained by gender-based differences in experience. Figure 4 illustrates the standardized regression coefficients for individual paths. We did not test number of employees supervised or level of education as mediators because these variables were not significantly related to gender.

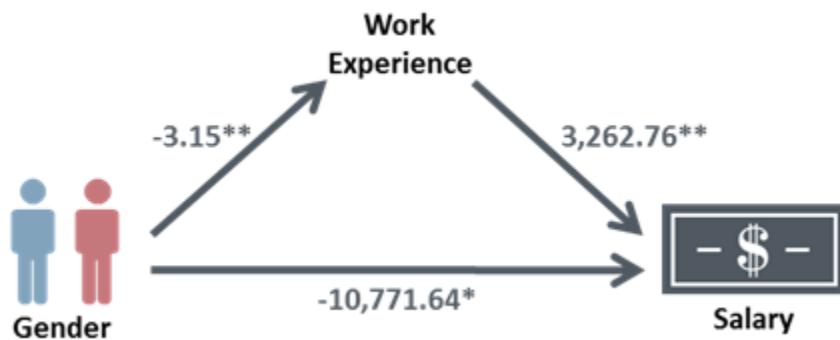


Figure 4. Work Experience Mediates the Effect of Gender on Salary

Note: Gender was coded as 1 = male, 2 = female.

In sum, it appears work experience is a key factor in explaining the gender pay gap for respondents to the 2016 SIOP Income and Employment Survey. Men, on average, have more years of work experience than women in the field. However, there remains an effect of gender on salary independent of work experience, as work experience only explained about half of the gender differences in salary.

Conclusion

The findings of this study are somewhat discouraging, as they indicate that there is a gender pay gap in I-O psychology even after controlling for years of work experience, number of employees supervised, and degree level. Previous research (e.g., Morgan, 2008) found that pay gaps were minimal between men and women with graduate degrees, and as most I-O psychologists have graduate degrees, the presence of a gender-based pay gap is somewhat surprising. All individuals included in the analysis were employed full time, so the gender pay gap cannot be explained by women opting for more part-time work than men. Additionally, the gender pay gap existed even after controlling for number of employees supervised (a proxy for authority, which was identified by Alkadry and Tower (2011) as a variable that partially explained the gender pay gap).

How, then, do we reduce the gender-based pay gap within I-O psychology? Some research suggests that women generally expect lower pay than do men (Hogue et al., 2010; Lips & Lawson, 2009), and coupled with women's hesitancy to negotiate pay (Leibbrandt & List, 2015), this could lead to reduced pay among women in the field. Graduate advisors are often instrumental in helping their advisees land their first full-time I-O position, so graduate advisors could help mitigate the gender pay gap by encouraging their advisees of both genders to negotiate for higher pay when they receive their first job offer. Publications such as the SIOP Income and Employment Survey are also instrumental in helping early-career I-O psychologists develop realistic pay expectations, which can be informative during negotiations. Graduate program coordinators should ensure that their students are aware of such resources, and job seekers should use these resources to help them negotiate a salary appropriate to the position and the region.

The results of this study suggest an opportunity for future research into the pay gap between men and women in I-O psychology. A limited set of variables were examined in order to investigate the correlates of the gender pay gap, and past research suggests a number of fruitful possibilities for additional research. Variables not available in the salary survey, such as child and/or elder care responsibilities and likelihood of negotiating salary when approached with a job offer, should be considered in future research related to the pay gap in I-O psychology. As a field that advocates fair, equitable treatment for all

employees in the workplace, the field of I-O psychology should set an example by thoroughly investigating the factors that lead to differing career outcomes for its members.

References

Alkadry, M. G., & Tower, L. E. (2011). Covert pay discrimination: How authority predicts pay differences between men and women. *Public Administration Review*, 71, 740-750. doi: 10.1111/j.1540-6210.2011.02413.x

American Association of University Women. (2017). The simple truth about the gender pay gap. Retrieved from http://www.aauw.org/aauw_check/pdf_download/show_pdf.php?file=The-Simple-Truth

DuVernet, A., Poteet, M., Parker, B., Conley, K., & Herman, A. (2017, January). Overview of results from the 2016 SIOP income & employment survey. *The Industrial-Organizational Psychologist*. Retrieved from <http://www.siop.org/tip/jan17/income.aspx>

Goldin, C., Kerr, S. P., Olivetti, C., & Barth, E. (2017). The expanding gender earnings gap: Evidence from the LEHD-2000 census. *American Economic Review: Papers and Proceedings*, 107, 110-114. doi: 10.1257/aer.p20171065

Hogue, M., DuBois, C. L. Z., & Fox-Cardamone, L. (2010). Gender differences in pay expectations: The roles of job intention and self-view. *Psychology of Women Quarterly*, 34, 215-227. doi: 10.1111/j.1471-6402.2010.01563.x

Leibbrandt, A., & List, J. A., (2015). Do women avoid salary negotiations? Evidence from a large-scale natural field experiment. *Management Science*, 61, 2016-2024. doi: 10.1287/mnsc.2014.1994

Leslie, L. M., Manchester, C. F., & Dahm, P. C. (2017). Why and when does the gender gap reverse? Diversity goals and the pay premium for high potential women. *Academy of Management Journal*, 60, 402-432. doi: 10.5465/amj.2015.0195

Lips, H., & Lawson, K. (2009). Work values, gender, and expectations about work commitment and pay: Laying the groundwork for the “motherhood penalty?” *Sex Roles*, 61, 667-676. doi: 10.1007/s11199-009-9670-0

Morgan, L. A. (2008). Major matters: A comparison of the within-major gender pay gap across college majors for early-career graduates. *Industrial Relations*, 47, 625-650. doi: 10.1111/j.1468-232X.2008.00538.x

Poteet, M. L., Parker, B. N., Herman, A. E., DuVernet, A., & Conley, K. M. (2017). Society for Industrial and Organizational Psychology (SIOP) 2016 salary survey. Retrieved from <http://www.siop.org/tip/Jan17/Report.pdf>

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, and Computers*, 36, 717-731.

Proctor, B. D., Semega, J. L., & Kollar, M. A. (2016). Income and poverty in the United States: 2015. *U.S. Census Bureau, Current Population Reports* (P60-256(RV)). Retrieved from <https://www.census.gov/content/dam/Census/library/publications/2016/demo/p60-256.pdf>

Veira, X. Gonzalez. (2017, October 26). Can we talk about the gender pay gap? *The Washington Post*. Retrieved from: https://www.washingtonpost.com/graphics/2017/business/women-pay-gap/?utm_term=.4590ac04df1f

The Scientist–Practitioner Gap Among Master’s Level I-O Psychology Practitioners: A Text-Analytic Exploration

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The scientist–practitioner gap in the field of industrial-organizational psychology refers to the poor connection between evidence generated by academia and the perceived practicality and use of that evidence by practitioners in industry (Aguinis, et al., 2017; Levy, 2017). This gap is the result of many complex issues, two of which are: (a) practitioners moving away from established evidence-based practices rooted in the scientific literature, and (b) academics conducting research that is perceived to have little to no practical relevance to the applied world. I-O psychology is recognized as an applied discipline, and a sizable gap between practitioners and scientists limits the effectiveness of both (O’Neil, 2008).

Recent calls for a greater emphasis on evidence-based management (Briner & Rousseau, 2011) have increased the need for I-O psychologists to reflect on the relationship between science and practice. The nature of I-O psychology and its relevance to the workplace have been concerns for years (Cascio, 1995) but are especially relevant today. As new entrants (e.g., data scientists) join the marketplace, a professional identity becomes ever more important (Nolan, Islam, & Quatrone, 2014). Although discussion of an identity crisis within the field is an important topic of research (Gasser, Butler, Waddilove, & Tan, 2004; Ryan, 2003; Ryan & Ford, 2010), we seek to extend the scientist–practitioner gap discourse by qualitatively exploring the perspectives of a different subset of the practitioners, namely master’s level I-O practitioners.

Exploring the relationship between science and practice by investigating the perspectives of master’s level I-O practitioners will expand the scope of the scientist–practitioner gap research. The majority of scientist–practitioner gap research concentrates on the role of doctoral-level academics and practitioners (Halfhill & Huff, 2003; Toaddy, 2015). Although the activity of doctoral-level practitioners is important, recent SIOP membership trends (Ruland, 2017) seem to indicate a rising tide of master’s level practitioners entering the workforce. A review of the SIOP Graduate Training Program database conducted by the researchers indicates that 4.5 times more students were reported to have graduated with a terminal master’s degree than a doctoral level degree in I-O psychology per year (based on reported 2016 degrees awarded). Despite the number of master’s level practitioners entering the field, their views and perspectives have not been the focal point of the majority of scientist–practitioner gap research. Without a comprehensive un-

derstanding of these perspectives, the self-reflection of the field will prove to be limited. (Anseel, Carette, Lang, & Lievens, 2014; Lefkowitz, 2014; Smerek, 2010). With the rapid rise of the number of I-O psychology practitioners (Bureau of Labor Statistics, 2015; SIOP, 2015) and the recent trends in the increase of master's level graduates graduating from online programs (Landers, 2017), a deeper understanding of the experiences of master's level practitioners is of great importance.

Method

The researchers of the present inquiry sought to address this issue by approaching the scientist-practitioner gap using a qualitative methodology based on the work of Toaddy (2015). A qualitative method was chosen to better understand the "what" sentiments (Wertz, et al., 2011) of practitioners' focus. Two researchers developed semistructured interview questions based on Toaddy's (2015) questions. The semistructured interview questions can be found in Table 1. The researchers sought to answer the following broad research questions:

1. How do master's level I-O psychology practitioners view their role in conducting research?
2. How do master's level I-O psychology practitioners conduct I-O psychology practice?
3. What resources do they use and what approach do they take?
4. How do master's level practitioners view their careers and career opportunities in comparison to PhDs?

Table 1
Interview Questions

1. What is your definition of the scientist-practitioner model as it applies to your own professional life?
 - a. *(Follow-up)* Do you consider yourself a scientist-practitioner?
 - b. What are the greatest challenges (impediments) you face in your attempt to enact that model personally at work (including, perhaps, a lack of interest in enacting the model)?
 - c. *(Follow-up)* What, if anything, could/should be done to remove these impediments?
2. What resources do you turn to when working on projects? Do you turn to trade publications (e.g., *HR Magazine*, *T&D Magazine*), research journals (e.g., *JAP*, *Personnel Psychology*), and/or benchmarking sites (e.g., CEB: executiveboard.com, SHRM.org)?
 - a. *(Follow-up)* Which resources do you use more often?
 - b. *(Follow-up)* Which resources do you find more useful for accomplish your work?
3. What is the role of the scientific I-O psychology literature in your work?
4. Do you feel that your work impacts the I-O psychology research agenda or research literature? Why or why not?
5. Do you get involved in I-O practitioner research at work (e.g., white papers, unpublished proprietary research, etc.) and/or I-O academic research (peer reviewed articles)?
6. In your view what is the difference between a master's level practitioner and a PhD level practitioner?
 - a. *(Follow-up)* Do you feel master's level practitioners have different career opportunities than PhD level practitioners?
 - b. *(Follow-up)* Did your master's program share with you the limitations of your degree?
7. Do you feel that organizations view those with a master's degree in I-O as scientists?
8. Do you feel that organizations see master's level practitioners as merely HR with a different degree/title?
9. Do you have any other comments about the scientist-practitioner gap?
 - a. What is your proposed solution for the gap between scientists and practitioners?

Nine individuals with master's in I-O psychology were recruited to participate in a semistructured interview about the scientist-practitioner gap. Three practitioners each were purposively chosen at different career levels: early career (0–3 years), midcareer (3–9 years), and established career (9+ years). Interview participants were assured confidentiality. A summary of the participants' career experience and demographic information can be found in Table 2. The interviews were audio recorded and transcribed. The transcribed interviews were delivered to the researchers in the form of text files.

Table 2
Participant Demographics

Career level	Gender	Job titles	Role type	Industry
Early career	2 women, 1 man	HR generalist, HR manager, junior project manager	Internal and ex- ternal consulting	Media and web design, market research, mass media
Midcareer	2 women, 1 man	Consultant, HR generalist, OD manager	Internal and ex- ternal consulting	Healthcare, food and beverage, media
Established career	2 men, 1 woman	Training consultant, In- structional designer, OD manager	Internal and ex- ternal consulting	Food and beverage, mass media, training and development

Results

Text Analyses

The transcripts of the interviews were analyzed using Tropes, a text analysis program, which allowed the researchers to conduct initial text mining and identify general themes in a corpus of the text. In the present study, the analyses were conducted on a question-by-question basis. The result of the text mining can be found in Table 3.

Table 3
Text Mining Language Extraction via Tropes

Question	Concept extracted	Occurrence in all documents		Interpretation
		56%	44%	
What is your definition of the scientist-practitioner model as it applies to your own professional life?	Data	56%	44%	Data and research are necessary to provide support for the work of practitioners. Clients implicitly request rigorous work. However, practitioners must balance the needs of science with the needs of business.
	Research	44%	33%	
	Clients	33%	33%	
	Business	33%	33%	
	environment	33%	33%	
Do you consider yourself a scientist-practitioner?	Science	50%	38%	Despite the occurrences of the term scientist and science many master's level practitioners see
	scientist/practitioner	38%	25%	
	Clients	25%	25%	

What are the greatest challenges (impediments) you face in your attempt to enact that model personally at work (including, perhaps, a lack of interest in enacting the model)?	Research Time Business Balance Understanding Data	25% 33% 33% 22% 22% 22%	themselves as more practitioner than scientist. Even for master's level I-O practitioners, balance between the business needs and scientific needs seems to be a challenge. Especially potent are challenges with regards to time.
What resources do you turn to when working on projects? Do you turn to trade publications	Publications Journals <i>HR Magazine</i> Leadership Council Best practices	44% 33% 22% 22% 22%	Publications were used however most of these seemed to be trade publications or vendor provided documents rather than academic research literature. Vendor provided documents via a consulting company like CEB are used because they have best practices, established templates, and benchmark data, which academic research publications do not have.
Do you have any other comments about the scientist-practitioner gap?	Scientific approach Field Statistics	33% 33% 33%	
Do you feel master's level practitioners have different career opportunities than PhD level practitioners?	Career People	33% 56%	The PhD level practitioner may be viewed as more capable and credible to some clients however most master's level practitioners view themselves as being equally capable. Interview participants felt that master's level practitioners entered the workforce earlier in their careers which provides more experience over PhD graduates. They do feel that over time that PhDs and master's level candidates have equivalent opportunities in industry because master's level practitioner gain valuable people skills that a PhD level practitioner takes more time to gain.

Responses to several interview questions developed by the researchers were summarized in Table 4. Table 4 displays percentages that indicate the level of agreement participants expressed regarding the posed questions. When reflecting on the responses, several things can be surmised. First, all interviewees felt as though their work was not and would not contribute to research in the field of I-O psychology. This view demonstrates that the practitioners themselves do not feel their work is valuable to advancing the scientific agenda for the field. Most participants asserted that they want access to academic research but that their organization did not provide it. This further exacerbates the gap; if practitioners do not have access to research they can neither use nor contribute to it. Last, the master's-level I-O participants did not feel that organizations valued them as scientists but that they were simply "HR with a different degree." This indicates a lack of brand identity for those trained in I-O versus those trained in HR. In addition to these reflections, the researchers reviewed the responses to the questions summarized in Table 4 and identified that despite the lack of effect on I-O research, all interview participants expressed positive attitudes towards the I-O research literature. A review of the responses indicated hopefulness on the part of the interview participants of finding a solution to the gap in the applied and academic worlds.

Table 4
Percentage Agreement With Select Interview Questions

<i>Question</i>	<i>Experience level</i>	<i>Percent agreement with question</i>
Do you feel that your work impacts the I-O psychology research agenda or research literature?	Early career	0%
	Midcareer	0%
	Established career	0%
If you had access to scientific research literature would you use it?	Early career	67%
	Midcareer	67%
	Established	67%
Do you feel that organizations view those with a master's degree in I-O as scientists?	Early career	0%
	Midcareer	0%
	Established	0%
Do you feel that organizations see master's level practitioners as merely HR with a different degree/title?	Early career	100%
	Midcareer	100%
	Established	100%

The researchers also approached the corpus of text from a more traditional qualitative approach. The interview transcripts were reviewed by two graduate-level researchers who identified three broad themes in the interview responses. The identified themes were (a) Balancing Science and Practice, (b) Research and Resources, and (c) Master's Versus PhD Educational and Career Differences. The content coders also identified representative quotes that embody the themes and issues that interview participants expressed. Representative quotes can be found in Table 5.

Table 5
Representative Quotes by Theme

	Dimension 1: Balancing Science and Practice	Dimension 2: Research and Resources	Dimension 3: Master's Versus PhD Educational and Career Differences
Early career	<p>"I learned more from professors who were adjuncts or part-time, because they were actually implementing and working and doing the stuff they were teaching...They gave us real life experiences and I think I found it much more relatable."</p> <p>"I feel like learning in school...is not as up-to-date...I'm not saying like ten years old but it's definitely not like what's in a year or two."</p>	<p>"Well, actually SHRM.org I think it's a combination of all of the above. I think that you know, I'll actually add another question so if we think about some of the clients I'm working with I'm not interested they like the concept of like the HR Magazine so to speak but when you look at you know, getting down to the actual mechanics of the type of work that we're doing that is probably ahm publication."</p>	<p>"I think that they think of people [with master's] as subject matter experts but as scientists? I don't know."</p>
Midcareer	<p>I am not going to, even in some of the journals that I provided articles for or coauthored I am not going to those places anymore"</p>	<p>"I actually I go to CEB a lot. you've heard about them, right? So I use CEB a lot I use google white papers a lot I used to use research journals when I have the access"</p> <p>"And I use, sometimes I use SIOP but not as much."</p> <p>"Sometimes I use LinkedIn. I use it more as a benchmark."</p>	<p>"I suppose it depends on how long you stay in the role as a practitioner. The longer the people are in the role as a practitioner, the smaller the divide becomes; it becomes much more practitioner-focused. But straight out of the university program, I think the divide is pretty big. At master's level, it tends to be much more practitioner-focused and the PhD level is much more academic-focused in the beginning. Over time, you learn how to talk the language of your client and if the clients do not demand it, you are not going to do it."</p>

Established career	<p>"So it is sort of bouncing between what's a must have from a scientific perspective and a scientific method, and what sort a nice to have in terms of going above and beyond from a science perspective that may not always align with the business implementation timing perspective. It may not align with sample size; it may not align with the ability to communicate certain things to certain groups of employees. So really deepening on what you are really doing there are some practical limitations."</p>	<p>"We certainly write quite a few white papers and have in the past here around different things. Interestingly enough, it's probably more functionally base. I have written several within this function for different R&D folks where there is a talent component versus pure I.O. white papers."</p>	<p>"My personal observation with Ph.D. practitioners, to no fault of their own, [is that] they are experts in the statistics and the numbers and what the data is saying. So they are focused on things like effect size and what the numbers look like behind the data. And I agree that is all very important, but I think sometimes they may struggle with translating it to what it means for the business or business speaker, or translating science findings in general to corporate application."</p>
		<p>"The takeaway is to seek out a company that gets it, and then that's where you will go feel like you are an I.O and not just an H.R person [...] I think some business partners get it because some of them do have an I.O background, but I wouldn't say that most people in the company outside of H.R would even know what I.O is. But that being said, most people in the world don't know really know what I.O unless they're in the corporate field. Even then, it's very hard to get that concept across as to what it is that we do."</p>	

Summary Results by Career Level

Early career. Those just beginning their careers found themselves experiencing a notable gap between science and practice. The interview participants stated that there is a disconnect between what is taught in graduate school and what is required in industry. The prevailing opinion was that what was learned throughout a practitioner's education is helpful, but the key to balancing science and practice was learning how psychological theories can and should be applied in real life organizational situations. Interviewees at this career stage mentioned that experience is needed to address the scientist-practitioner gap. This balance comes through experience or coaching from experienced practitioners.

One of the key insights is that practitioners do not have access to peer-reviewed journals to reference I-O psychology research literature. As an alternative, interview participants use benchmarking tools as resources. These benchmarking tools are referenced from sources such as CEB and *Harvard Business Review (HBR)*. The interviewees also use colleagues as sources of information, or they utilize what is working for other organizations. They leverage these identified practices as a starting point for the projects they are working on.

Regarding the differences between master's and PhD holders, those at this stage of career do not think there is a substantial difference in career opportunities. It was agreed that the primary difference between master's and PhD I-O psychology professionals is that the PhD holders are more heavily invested in research, whereas those with a master's degree are more likely to have practitioner experience.

Midcareer: The interviewees at this career stage recognized that a gap exists between academia and industry. They also emphasized the necessity to translate theoretical ideas and statistical evidence into more meaningful content for business outcomes. Midcareer practitioners found it more useful to use resources such as CEB and white papers as reference. Peer-reviewed journals were used to a lesser extent. However, interview participants stated that the use of peer-reviewed journals required translation of academic jargon into terms applicable to their organization as well as difficulty maintaining access to scientific journals.

The interviewees agreed that there is a difference in career opportunities for individuals with PhD's versus those with a master's. For example, I-O psychologists with doctorates are more open to working in academia or in more statistics and data-driven roles. They also mentioned that although more options may be available for someone with a doctorate, master's level practitioners have ample opportunities as well. There was also agreement that it is likely that organizations do not view people with a master's in I-O psychology as scientists.

Established Career

These interviewees touched on the idea that there can be a gap between science and practice depending on project stakeholders. When working with clients, there is not much interest in talking about the science behind the practice. Resources such as HBR and CEB and databases of that nature are the most utilized. They echo the idea that the people they work with are most interested in benchmarking against other organizations and their practices rather than looking to scientific research. These interviewees varied on their view of the differences between an I-O psychology PhD versus a master's. However, they did agree, to some extent, that work experience and years being a practitioner can lessen the differences. A PhD might be more interested in research and theory and less able to apply and translate it into business language at the beginning of their career, but as time and experience increases, these skills

begin to look similar in both master's and PhD I-O professionals. Overall, this group agreed organizations do not view I-O psychology practitioners at the master's level as scientists. However, there was discussion that this perception depends on the organization and their understanding of what an I-O psychology practitioner does.

Career Progression

In reviewing the answers received from the nine interviews, the researchers noticed a complexity of the answers with career progression. For example, those early in their careers indicated the wide gap between science and practice. However, those at the midcareer stage went further to emphasize the need to translate theoretical work into business language. Similarly, those at the early stages of their career agreed that there are large differences in the educational levels and career paths of master's and PhD holders. However, those with more experience gave more nuanced answers, indicating that the differences depend on the industry and opportunities. Those in the midcareer stage indicated that master's-level I-O practitioners enter the workforce earlier in their careers which grants them more professional experience over PhD graduates. This progression in the complexities of responses may be due to the growing experience in the field and the increase in responsibilities.

Discussion

Although much research has been conducted on the issue of the scientist-practitioner gap, there has been a dearth of research on the experience of master's level I-O psychology practitioners using the specific methods presented in this work. As far as the researchers have found, the present study represents the first effort at such an analysis. Although a small sample size limits this study, several conclusions can be drawn from the insights gained from the interviews.

A Different Perspective on the Scientist-Practitioner Gap

Answering recent calls to expand the scientist-practitioner gap research (Yuan & Brown, 2017), the present study sought to address the scientist-practitioner gap from a different perspective. Though PhD-level practitioners have been the focus of most of the scientist-practitioner gap research, the present study found initial evidence that master's-level practitioners also experience and recognize the gap. Master's-level practitioners experience the gap as an expression of their own views of their limitations as practitioners and a perception by organizations of their role within the company. In the current interviewee sample, it seems master's-level I-O practitioners perceive themselves to be outside of the scientific realm and thus focus more on practical issues of project completion and satisfying stakeholders. This study highlights the disconnect between the experience of master's level practitioners in their education versus the one attained while practicing in the field.

Another concept expressed both explicitly and implicitly by the interview participants was the need for a stronger brand identity of I-O psychology. Many of the interview participants perceived that their coworkers viewed them as a different form of HR. This echoes the concerns of prior research about the brand identity of I-O psychology (Nolan, Islam, Quartrone, 2014; Nolan, 2017). Master's level practitioners may need to gain a greater sense of the unique qualities of I-O psychology in relation to human resources in their graduate training.

Research Resources

Master's level practitioners may value research, but the results of the present study indicate that many do not have access to research databases and research journals. Recent SIOP initiatives to provide research database access to members may prove to be a key to decreasing the size of the scientist-practitioner gap. Without access to academic journal articles, practitioners base project decisions on Google searches, vendor-provided data, and white papers. This is a significant limitation to the reach of academic research. Despite the intentions of master's level practitioners or the quality of academic research, study results that cannot be accessed cannot be used. Despite not having access to academic resources, interviewees expressed positive regard for academic research indicating that the issue is not one of value but one of access and opportunity for use.

The results also indicate the importance of applied research conducted by consulting firms. This vendor provided research seems to serve as the primary source of much of the decision making that occurs in industry regarding HR and I-O related projects. The results of the present study highlight the importance of the evidence-based management movement. Consulting research and practitioner materials should be placed under more rigorous scrutiny due to their prevalent use by practitioners.

The researchers would also like to recommend that more journals generate easily accessible or open access research. Although this recommendation is not a direct finding of the present study, the open science movement may prove beneficial for master's-level practitioners searching for a scientific basis for their organizational interventions. SIOP's initiative to provide members with access to academic research and new journals such as *Personnel Decisions and Assessments* that are scientifically rigorous and open access may pave the way for greater access to practitioners.

Connection to Science

Another interesting finding was the lack of connection between master's level practitioners and the science of I-O psychology. Although the scientist-practitioner model is built to train all master's and PhD level I-O psychology practitioners in both conducting research and applying research, it appears that master's level practitioners are most comfortable with practice while eschewing research. It may be worthwhile for SIOP to reach out to master's level practitioners to provide resources and opportunity to conduct research. Master's level I-O psychology graduate programs should reflect on whether their training is providing students with enough confidence to speak on scientific issues in their organizations.

Limitations and Future Research

The present research has some key limitations. Although the researchers sought diversity in their sample by seeking varied perspectives among different training and career level I-O psychologists, the sample of interview participants was quite small. Future research should try to conduct interviews across a larger group of master's level practitioners. A greater variety of industry experience may also be valuable in future studies of the scientist-practitioner gap among master's level practitioners. A larger more varied sample could provide an answer to Aguinis et al (2017)'s question regarding the scientist-practitioner divide occurring later in a practitioner's career.

Future research should try to understand the processes by which I-O psychology practitioners conduct projects. In the present study, some of the participants hinted at issues of project management. Project management issues are not often discussed in I-O psychology education, but it may prove fruitful to learn more about how project management affects I-O psychology practice. In addition, understanding the specific topic areas that are most relevant to practitioners, and the challenges they face can create a

stronger connection to researchers. This would provide researchers with topics that are more likely to be leveraged by practitioners. Researchers should attempt to gain a greater understanding of the additional nonpeer reviewed sources of data that are used in organizing, administering, and implementing human capital projects within organizations.

Finally, future research should focus on the brand image of I-O psychology. The comments from the interviewees regarding the lack of distinction between HR and I-O leads to a clear sign that there is not enough brand distinction being drawn between I-O and HR (Nolan, Islam, & Quartrone, 2014; Nolan, 2017). Future research should continue to understand the distinctions between HR and I-O and whether individuals outside of the field of I-O psychology understand these differences.

A focus of the field of I-O psychology is furthering the evidence-base to inform practice (Aguinis et al., 2017). Yet, the scientist-practitioner gap persists. It is important to recognize the perspectives of practitioners to gain insight into the barriers they face in implementing evidence based practice and potential solutions that might better link scientific findings to their practical application. A stronger connection with these practitioners may provide insights for academics and practitioners related to their use of the science of I-O psychology and the obstacles facing the science's application in the workplace. With a growing representation in graduate schools and the workforce, a greater focus on master's level practitioners and the challenges they encounter may lead to improved organizational interventions overall and provide a new avenue for understanding the scholarly impact of I-O psychology research (Behrend & Landers, 2017; Kurtessis, Waters, Alonso, Jones, & Oppler, 2017). Master's level practitioners may prove to be crucial partners in developing the research agenda and implementing the science of I-O psychology.

References

Aguinis, H., Ramani, R., Campbell, P., Bernal-Turnes, P., Drewry, J., & Edgerton, B. (2017). Most frequently cited sources, articles, and authors in industrial-organizational psychology textbooks: Implications for the science-practice divide, scholarly impact, and the future of the field. *Industrial and Organizational Psychology*, 10(4), 507-557. doi:10.1017/iop.2017.69

Anseel, F., Carette, B., Lang, J., & Lievens, F. (2014). The move to business schools: How is industrial-organizational psychology holding up in Europe? *Industrial and Organizational Psychology*, 7(3), 365-370. doi:10.1111/iops.12164

Behrend, T., & Landers, R. (2017). The wicked problem of scholarly impact. *Industrial and Organizational Psychology*, 10(4), 602-605. doi:10.1017/iop.2017.63

Briner, R. B., & Rousseau, D. M. (2011). Evidence-based I-O psychology: Not there yet. *Industrial and Organizational Psychology*, 4(1), 3-22 doi:10.1111/j.1754-9434.2010.01287.x

Bureau of Labor Statistics (March 15th, 2015) The 10 fastest growing jobs Retrieved from <https://blog.dol.gov/2015/03/15/the-10-fastest-growing-jobs/>

Cascio, W. F. (1995). Whither industrial and organizational psychology in a changing world of work? *American Psychologist*, 50(11), 928. <http://dx.doi.org/10.1037/0003-066X.50.11.928>

Gasser, M., Butler, A., Waddilove, L., & Tan, R. (2004). Defining the profession of industrial-organizational psychology. *The Industrial-Organizational Psychologist*, 42(2), 15-20.

Halfhill, T., & Huff, J. (2003). The scientist-practitioner gap: Present status and potential utility of alternative article formats. *The Industrial-Organizational Psychologist*, 40(4), 25-37.

Kurtessis, J., Waters, S., Alonso, A., Jones, J., & Oppler, S. (2017). Traditional science-practice research in I-O: Are we missing the trees for the forest? *Industrial and Organizational Psychology*, 10(4), 570-576. doi:10.1017/iop.2017.57

Landers, R.N. (July 19th, 2017). Dominance of SIOP membership by online degree holders coming. Retrieved from <http://neoacademic.com/2017/07/19/dominance-of-siop-membership-by-online-degree-holders-coming/>

Lefkowitz, J. (2014). Psychology departments versus business schools: Tempest in a teapot? *Industrial and Organizational Psychology*, 7(3), 311-317. <https://doi.org/10.1111/iops.12153>

Levy, P.E. (2017). *Industrial organizational psychology: Understanding the workplace*. New York, NY: Worth Publishers.

Nolan, K. (2017). From analysis to evaluation: brand management and the future of I-O psychology. *Industrial and Organizational Psychology*, 10(4), 626-633. doi:10.1017/iop.2017.68

Nolan, K. P., Islam, S., & Quararone, M. (2014). The influence of vocational training on the brand images of organizational consultants. *The Psychologist-Manager Journal*, 17(4), 245-278.
<http://dx.doi.org/10.1037/mgr0000022>

O'Neil, T. (2008) Canadian scholars working to bridge the perceived scientist-practitioner gap. *The Industrial Organizational Psychologist*, 45, 4. Retrieved from <http://www.siop.org/tip/apr12/08oneill.aspx>

Ruland, B. (July 19th, 2017) Looking at SIOP membership trends. Retrieved from
http://www.siop.org/article_view.aspx?article=1693

Ryan, A. M. (2003). Defining ourselves: I-O psychology's identity quest. *The Industrial-Organizational Psychologist*, 41(1), 21-33.

Ryan, A., & Ford, J. K. (2010). Organizational psychology and the tipping point of professional identity. *Industrial and Organizational Psychology*, 3(3), 241-258.

SIOP. (2015) I-O a "hot job," shows job increases through 2018, according to Labor Department. Retrieved from
<http://www.siop.org/Media/News/hotjob.aspx/>

Smerek, R. (2010). The nature of knowledge, reflective practitioners, and the value of experience. *Industrial and Organizational Psychology*, 3(1), 38-40. doi:10.1111/j.1754-9434.2009.01194.x

Toaddy, S. (2015). "Scientist-practitioner"—you keep using that phrase. she does not think it means what he thinks it means. *The Industrial Organizational Psychologist* 52(3) 38-43

Wertz, F. J., Charmaz, K., McMullen, L. M., Josselson, R., Anderson, R., & McSpadden, E. (2011). *Five ways of doing qualitative analysis: Phenomenological psychology, grounded theory, discourse analysis, narrative research, and intuitive inquiry*. New York, NY: Guilford Press.

Yuan, Z., & Brown, K. G. (2017). Not another "researcher-centric" index: A cautionary note. *Industrial and Organizational Psychology*, 10(04), 598-602. <https://doi.org/10.1017/iop.2017.62>

**The Guidelines for Education and Training in Industrial-Organizational Psychology:
2016/2017 Revision and Curriculum Matrix Template**

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The most recent update of the Society for Industrial and Organizational Psychology's (SIOP) Guidelines for Education and Training in Industrial-Organizational Psychology was approved by the SIOP Executive Board in 2016 and approved as American Psychological Association (APA) policy in August 2017, culminating a review and revision that the SIOP Education and Training Committee began in 2015 (Payne, Morgan, & Bryan, 2015a, 2015b). Given the continued growth of industrial-organizational (I-O) psychology as a career field and APA Division 14 membership, as well as APA's mission to improve the qualifications of psychologists by establishing high standards of education and achievement, maintaining the Guidelines is as important as ever. The purpose of this article is to share the news of the approval of the new Guidelines and the availability of a curriculum mapping tool for evaluating the alignment of a program of study with the SIOP Guidelines.

SIOP maintains the Guidelines for Education and Training to provide direction for the training of I-O psychologists. The Guidelines describe recommended areas of competence, including general knowledge and skills, core content, and related areas of competence. They may be used by graduate programs in I-O psychology as a plan for content to address in coursework and other forms of training. The Guidelines may also be used by prospective students as a description of I-O training and criteria for evaluating training programs (Society for Industrial and Organizational Psychology, 2016/2017). The 2016/2017 revision is available at the SIOP website (<http://www.siop.org/ETguidelines.aspx>).

SIOP originally published the Guidelines for Education and Training at the Doctoral Level in 1973–1974, followed by a revision in 1985. In 1999, two separate Education and Training Guideline documents were published: one for master's-level training and one for doctoral-level training. The SIOP Guidelines review process recurs in order to meet the Association Rule 30-8.3 requirement that the policy be reevaluated within 10 years. The 2016/2017 Guidelines were updated from the 1999 version in a number of other ways, including consolidating two sets of Guidelines for master's and doctoral training into one comprehensive set. References to empirical research were updated and human performance was separated from the human factors competency. Several competencies were renamed, such as health and stress in organizations now titled occupational health and safety.

Within SIOP's Education and Training committee are a number of subcommittees dedicated to specific concentrations. One of these is the Guidelines Subcommittee, which leads the review of the Guidelines, gathers suggestions for revisions, submits proposed changes, and shepherds the revised Guidelines through review by SIOP membership, the SIOP Executive Board, and APA divisions and committees. The Guidelines Subcommittee members contributing to the revision effort (**Kristina Bauer, Mitzi Desselles, Rhonda DeZeeuw, Camille Drake-Brassfield, Julia Fullick-Jagiela, Jane Halpert, Michael Horvath, Tim Huelsman, Joy Oliver, Ludmila Praslova, Sylvia Roch, Amber Schroeder, Marissa Shuffler, Stephen Stark, Steven Toaddy, Anton Villado, and Christopher Wiese**) were led by Stephanie Payne (Guidelines Subcommittee Chair) and **Whitney Botsford Morgan** (Education and Training Chair).

The Education and Training Committee began the process of revising the now-approved 2016/2017 Guidelines by soliciting ideas from current committee members and SIOP membership (Payne, Morgan, et al., 2015b). SIOP members were invited to submit feedback on the Guidelines to the subcommittee. Then, the Guidelines Subcommittee administered a survey of I-O graduate program directors to elicit importance ratings for the competencies and master's and doctoral training (Payne, Botsford Morgan, & Allen, 2015). Respondents also reviewed revised competency descriptions and provided feedback. The Guidelines Subcommittee prepared a draft of the revised Guidelines and presented them to SIOP membership for comment in 2016. Then, the Guidelines Subcommittee prepared updated Guidelines for review by the SIOP Executive Board, which approved the Guidelines in April 2016. The Guidelines were then submitted to APA for review.

In a related effort, the revised Guidelines and the results of a career study conducted by the Professional Practice Committee were compared by Payne and Oliver (2016). In the career study, SIOP respondents indicated the competencies required for four practice areas in I-O psychology, academia, consulting, industry, and government. Payne and Oliver (2016) noted that nine competencies emerged in at least one of the four "Top Five" lists of required competencies, suggesting some degree of convergence between the revised Guidelines and membership assessment of importance of those competencies for the practice of I-O psychology.

The 2016–2017 Guidelines Subcommittee (Kristina Bauer; Amber Fritsch; Jennifer Gibson; Michael Horvath, Chair; Jane Halpert; Tim Huelsman; Stephanie Payne; Ludmila Praslova; and Amber Schroeder) created a Curriculum Matrix Template, which was revised and finalized by the 2017–2018 Subcommittee (**Nykeki Broussard; Amber Fritsch; Jennifer Gibson, Chair; and Tim Huelsman**). The template is a tool that program directors, prospective students, and others can use to assess the alignment of a program of study with the Guidelines. A brief excerpt of the template, which in its full form includes 26 competencies and two options for indicating depth of coverage, is presented in Table 1. Curriculum alignment matrices, also referred to in the assessment literature as "curriculum maps," are employed by educational institutions to match learning outcomes with elements of a curriculum index and review the academic content of a program as it aligns with learning standards. The Guidelines document itself enumerates seven means of training and 26 competencies, noting means of training for each of the competencies in a matrix format.

The Curriculum Matrix Template is a Microsoft Excel file into which a user can input a list of means of training within a program of study, such as formal courses, independent study, and other supervised research such as field research and practica. Curriculum mapping approaches can be applied to evaluate individual educational activities such as individual courses or sets of activities belonging to a curriculum or degree program. Following this approach, the Curriculum Matrix Template is designed to evaluate a

program of study, such as a master's or doctoral program in I-O psychology. Although any means of education can be used, the following table provides an example of how to use the Curriculum Matrix Template.

Table 1
Excerpt of the Curriculum Matrix Template with Sample Entries

SIOP competencies	Means of training (courses, independent study, supervised research)			Totals per competency		
	PSYC 505	PSYC 515	Practicum			
General knowledge and skills				Introduced	Practiced with feedback	Demonstrated on mastery level
1. Ethical, legal, diversity, and international issues	I			1	0	0
2. Fields of psychology	I, P			1	1	0
3. History and systems of psychology	I, P			1	1	0
4. Professional skills			I, P	1	1	0
5. Research methods		I, P	I, P	2	2	0
6. Statistical methods/ data analysis		I, P	I	2	1	0

Notes. Introduced (I), practiced with feedback (P), demonstrated on mastery level (D). The template is available online: <http://www.siop.org/ETguidelines.aspx>

cation and training may be entered into the template, the Guidelines offer descriptions of the following seven common examples: formal course work, independent reading/study, supervised experience (and field research), on-the-job training, modeling/observation, involvement in funded research, and collaborative research.

For each means of training entered into the template, the user indicates the depth of coverage of each of the 26 competencies by each means of training. For those seeking a general assessment of competency coverage by a program of study, users may simply indicate with an "X" whether a course or other activity is a helpful step toward competency development. For those seeking a more refined assessment, users may indicate the level of competency development as "introduced," "practiced with feedback," or "demonstrated on mastery level." "Introduced" refers to initial discussion and demonstration at a level appropriate for beginner students. It is a focused introduction, and not merely a passing mention of a concept. "Practiced with feedback" refers to opportunities students have to engage in activities of increasing difficulty and receiving constructive comments about their performance. "Demonstrated on mastery level" refers to knowledge or skills demonstrated at the level appropriate for graduation at the specific level of the degree. Demonstration is typically accomplished via assignments such as tests, papers, and projects.

The tool helps clarify and visually represent the relationship between what students do in specific courses and other activities with what they are expected to learn in the program (Allen, 2004). For users considering changes to a program of study, the template can help identify overemphasis or underemphasis of particular competencies, the existence of courses that do not map well onto desired competencies, or lack of a logical progression over the course of a program. The design of modifications to a

program may be informed by these findings. It is understood that students and other users will have access to less detailed program information than program directors. When information is limited, users may use “Option 2,” whereby the user simply marks “yes” or “no” for each of the competencies based on recommended coursework in the program.

The template is provided to all SIOP members and other interested individuals (<http://www.siop.org/ET-guidelines.aspx>). This tool was designed to help inform decision making about curriculum planning as well as prospective students as they make important decisions about their future. The template was not developed or intended to be used for monitoring purposes. Additionally, it was not created with the intent to assist programs with accreditation, evaluation, or review.

The Guidelines Subcommittee continues to work toward publicizing the updated Guidelines and raising awareness of the Guidelines among potential users. The Guidelines Subcommittee continually monitors online mentions of the Guidelines to assess how and when they are used in education and training settings; it also shared the Curriculum Matrix Template with program directors via email in September 2017. The 2016/2017 revision of the Guidelines reflects changes in the world of work that prompted modifications to descriptions of training topics and methods. The Guidelines Subcommittee and the Education and Training Committee will continue to monitor these changes, such as changes in the legal environment and technological advances, in preparation for the next revision of the Guidelines. The subcommittee also intends to reach out to SIOP members for their opinions about the Guidelines and their usage, but comments on these topics and feedback from those who have used the template are welcome at any time (siop.etcommittee@gmail.com).

References

Payne, S. C., Botsford Morgan, W., & Allen, J. (2015). Revising SIOP's guidelines for education and training: Graduate program director survey results. *The Industrial-Organizational Psychologist*, 53(2), 158–161.

Payne, S. C., Morgan, W. B., & Bryan, L. K. (2015a). *Revision of SIOP's guidelines for education and training at the doctoral and master's level in I-O psychology*. Presented at the 30th Annual Conference of the Society for Industrial and Organizational Psychology, Philadelphia, PA.

Payne, S. C., Morgan, W. B., & Bryan, L. K. (2015b). Revision of SIOP's guidelines for education and training is underway. *The Industrial-Organizational Psychologist*, 53(1), 167–168.

Payne, S. C., & Oliver, J. (2016). A comparison of the revised guidelines to the careers study results. *The Industrial-Organizational Psychologist*.

Society for Industrial and Organizational Psychology. (2016/2017). *Guidelines for education and training in industrial-organizational psychology*. Bowling Green, OH. Retrieved from <http://www.siop.org/ETguidelines.aspx>

New Directions in Diversity and Inclusion: A Dialogue on What Truly Works

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Diversity and inclusion are among the most popular topics driving SIOP submissions and research over the last decade (SIOP, 2016). Although this field has been the focus of sustained work by many I-O psychologists, inspiring at least two volumes in SIOP's Professional Practice Series (Ferdman & Deane, 2014; Jackson and Associates, 1992), some basic questions in this area remain controversial, and worse, unaddressed. At SIOP's 2017 annual conference in Orlando, a panel of experts discussed some of these questions in the context of what is "innovative" and "new" in the field of diversity, with the goal of distinguishing organizational practices that may be fads from more substantive, effective approaches to fostering diversity and inclusion (Shyamsunder, Burlacu, Eagly, Ferdman, & Nugent, 2017).

The panel brought together established researchers and practitioners who have looked at this topic in a variety of ways. Bernardo M. Ferdman, Distinguished Professor at the California School of Professional Psychology at Alliant International University and principal at Ferdman Consulting, brought a perspective based on research and his consulting experience to focus on inclusion as a key outcome that diversity initiatives seek to influence. Alice Eagly, Professor of Psychology at Northwestern University, shared insights about problems that arise when claims about diversity are not evidence based. Julie S. Nugent, Vice President and Center Leader of the Catalyst Research Center for Corporate Practice, shared her perspective on defining and measuring organizational inclusion. Gabriela Burlacu, Human Capital Management Researcher at SAP SuccessFactors, shared insights into how companies are applying technology to address diversity and inclusion challenges. The discussion was led by Aarti Shyamsunder, an independent consultant based in Bangalore, India who routinely engages with companies on diversity and inclusion issues.

The panelists raised critical topics in the research and practice of diversity and inclusion. In this article, we distill some of the themes brought forth concerning pressing questions in this field.

Theme #1: What Is the "Value" of Having More Women on Corporate Boards?

Companies are spending more than ever before on diversity (Dobbins & Kalev, 2016), but it remains hotly debated whether this spending has yielded sufficient results. Often, this discussion emphasizes the

“business case” argument that financial rewards should determine the investment. The panelists explored a well-investigated aspect of this argument by focusing on the “business case” for including more women on the boards of organizations.

The popular view—espoused by consulting organizations, media, and advocacy firms—is that gender-diverse boards create improved business outcomes (e.g., McGregor, 2014). In their research paper titled “Why Diversity Matters” (Hunt, Layton, & Prince, 2015), McKinsey reported that, in the United Kingdom, every 10% increase in executive-level gender diversity led to 3.5% increase in organizational earnings before interest or taxes. Catalyst, a nonprofit organization seeking to accelerate the progress of women at work, revealed similar findings: They found that companies with more women on their boards had 16% higher return on sales and 26% higher return on invested capital than those with fewer women (Carter & Wagner, 2011). They also found that there is a “critical mass” of women on boards, with three or more women required for the organization to experience the value of having female representation at the top. These kinds of findings have influenced policy and law. Getting greater representation of women on boards is considered so imperative that some countries and regions have passed legislation mandating it (Catalyst, 2017a).

During the panel discussion, Eagly argued that the scientific research has not supported this link. First, correlation does not equal causation. Often advocacy firms conduct research at one point in time, correlating proportions of female board members and company financial performance. However, it is unclear whether there may be other variables that could cause an increase in both. It is also unclear whether causation may go in the other direction, with greater financial performance giving companies better resources to seek out and attract female board members.

A recent meta-analysis of over 140 studies (Post & Byron, 2015) compiled correlations between percentage of women on boards and firm performance. On average, these were near zero, even when measuring financial outcomes in different ways. Further, the relationship was moderated by sociocultural context: It was more positive in countries with stronger shareholder protections and in countries with greater gender parity. These moderators suggest that investors’ perceptions and impressions may also influence organizational profitability. Thus, researchers need to look at the question in more complex ways.

The panel also discussed that, from a practical perspective, there are benefits to having women on boards that may not necessarily be reflected in objective measures of financial performance. For example, research suggests that female leaders can serve as role models for future female workers (e.g., Beaman, Duflo, Pande, & Topalova, 2012; Herrman, et al., 2016), and as indicators that organizations value women as leaders (Bear, Rahman, & Post, 2010; Strauss, 2016). It has also been suggested that having a diverse board can lead to diversity of thought, greater innovation, and reduced groupthink (Galia & Zenou, 2012; Miller & Triana, 2009) and that for organizations serving increasingly diverse customer bases, a diverse board can ensure better service of customers’ diverse needs (Arfken, Bellar, & Helms, 2004). However, whether the causal relations implied by such claims can be substantiated has yet to be determined.

The notion of establishing a “business case” for more women on boards—as well as for more diversity in general—was itself questioned by some of the panelists in terms of being an effective practice. Burlacu, for example, suggested that because women are in the workforce and boards should reflect the workforces they lead, no business case proof should be required. This reflects how other researchers have examined the business case for LGBT inclusive practices (King & Cortina, 2010). Shyamsunder countered that different stakeholders may be engaged or “convinced” using different data points and evidence, so in general our field

should better clarify the compelling reasons that business leaders should care about increasing women's access to board positions and for more broadly increasing the diversity of organizational leadership.

Conclusion

It is unclear whether having more women on boards *causes* organizations to perform better financially. However, although the financial gain itself may be minimal, there may also be nonfinancial reasons organizations should consider investing in processes that enhance women's access to board positions, including the idea that a traditional "business case" may be unnecessary. I-O psychologists can greatly advance this area of study by clarifying the scientifically based reasons business leaders should maintain a focus on increasing female representation at the board level and more generally on increasing the diversity of organizations' top leaders.

Theme #2: What Are the Methods That Work to Increase Diversity and Foster Inclusion?

Despite increased organizational focus on diversity, the World Economic Forum (2016) has shown that gender-based pay gaps remain across the world, with women earning less than men in nearly every region. Just 5.2% of S&P 500 and 6.4% of *Fortune* 500 organizations are currently led by women (Catalyst, 2017b; McGregor, 2017). Various researchers have documented bias in organizational hiring practices, with job candidates from underrepresented groups being less likely to be interviewed and subsequently hired (e.g., Scheiber, 2015; Terkel, 2014; Watts, 2014). Dobbins and Kalev (2016) have argued that relative lack of progress occurs because organizations have relied for years on the same ineffective methods to address diversity.

So what practices will drive real change in creating more diverse workforces and inclusive organizations? The panel discussed the relative merit of emerging approaches.

Unconscious Bias Awareness Training

Having taken many forms over the years, diversity training now often includes a focus on participants' awareness of their own unconscious biases (McCormick, 2016). Unconscious bias awareness training involves teaching about the biases we all hold and how these can inadvertently affect our actions. The ultimate intent is to get people to think differently about the factors that influence how they act and speak at work, and how they treat people from different identity groups. Many well-known companies, including Google, have administered this kind of training to employees (Guynn, 2015).

Unfortunately, unconscious bias awareness training may have limited long-term effectiveness (e.g., Dobbins & Kalev, 2016). First, it suffers from a challenge impacting all diversity training: Simply hearing about diversity and individual differences can activate or exacerbate the biases that people have. Research has shown that people high in social dominance orientation—the belief that individuals exist within a hierarchy and some people are simply better than others—respond poorly to diversity training (Sabat, et al., 2016). Second, simple awareness of our unconscious biases does not guarantee that we will apply those lessons to behave differently at work. Although unconscious bias awareness training is on the rise in organizations, continued experience of microaggressions and workplace discrimination suggests that transfer of training is limited (e.g., Sterzing, Gartner, Woodford, & Fisher, 2017). Further, it is not clear how such training serves to change the larger organizational or societal systems that create, foster, or perpetuate bias (Ferdman, 2014).

Inclusion Nudges

The panelists discussed a new method being deployed in organizations called *inclusion nudges*, which involves creating processes and tools that “nudge” people toward making unbiased decisions at work (Nielsen & Kepinski, 2016). An example would be enlisting a checklist approach to performance feedback to ensure the feedback is rich in content and substance, regardless of the employee receiving the feedback, as vague feedback untied to clear business objectives is something women disproportionately experience (Correll & Simard, 2016).

This approach differs from diversity training because it influences behavior as it occurs. It also removes the potential obstacle of having participants reject or respond poorly to the intervention, as it does not need to be presented as a diversity initiative despite its power in eliminating bias and unfair treatment. However, some change to existing processes and tools is required.

The panel also discussed applications in technology designed to support “nudging” decision makers toward unbiased behavior. Technology companies have begun embedding these kinds of tools in human capital management software solutions (Kostoulas, 2016). Although leveraging technology to nudge behavior is promising, this practice requires diversity professionals’ involvement in purchasing decisions as well as decisions regarding how the technology is configured for organizational use. In the panel’s view, this involvement is not yet a common practice among businesses, where these decisions more likely fall under the latitude of HR information technology teams.

Focus on Inclusion

Organizations are increasingly recognizing that focusing on diversity highlights differences among people, while focusing on inclusion highlights the welcoming culture that is sought to encompass and harness these differences (Dobbins & Kalev, 2016; Ferdman, 2017; Moran, 2017). A diversity-based practice might be to hire more women into leadership roles. An inclusion-based practice might be to facilitate opportunities for all employees to contribute ideas while also ensuring equitable access into leadership for women and fair treatment of women’s contributions. Inclusion is not a new concept in the literature; researchers have been exploring ways to measure and enhance feelings of inclusion for over a decade (e.g., Ferdman, Barrera, Allen, & Vuong, 2009; Mor Barak & Cherin, 1998; Roberson, 2006; Stamper & Masterson, 2002). But particularly in recent years, practitioners have noted that more and more companies are finding that inclusion-focused practices generate the best outcomes, least backlash, and greatest alignment with business objectives (Sherbin & Rashid, 2017).

In discussing approaches to fostering inclusion, Nugent shared results from a Catalyst survey designed to identify how employees determine whether an organizational environment is inclusive. The findings suggest that repeated exclusionary experiences, such as microaggressions and stereotyping, have a cumulative effect. Conversely, strong social connections among colleagues, inclusive leadership, and demonstrated organizational commitment to diversity all indicate to employees that their opinions, experiences, and perspectives are valued. Ferdman shared a multilevel model of inclusion in which individuals’ experiences are embedded within a system that includes the practices, policies, and ideologies of teams, leaders, organizations, and society as a whole (Ferdman, 2014), noting the tensions and paradoxes between initiatives designed to make individuals feel included and those designed to harness diverse, different perspectives in the workplace (Ferdman, 2017). More rigorous scientific research is needed to clarify what makes an organization truly inclusive and how this can be achieved through the actions of team members and leaders. Nevertheless, the panel indicated that interventions focused on fostering inclusion that appropriately involve employees, managers, and other stakeholders in their development appear to have merit in supporting sustained workforce diversity.

Conclusion

Many organizations continue to use traditional methods, particularly training, to address diversity. But new methods have emerged that directly influence employees' actions and attitudes and change the structural conditions and processes that shape behavior. I-O psychologists can greatly advance organizational thinking by contributing rigorous scientific research to determine the relative merit of these approaches. As a starting point, the panel concurred that a focus on inclusion (and diversity) rather than only diversity appears to hold promise in dispelling negative attitudes toward diversity training and fostering an organizational culture in which all employees can thrive.

References

Arfken, D.E., Bellar, S.L., & Helms, M.M. (2004). The ultimate glass ceiling revisited: The presence of women on corporate boards. *Journal of Business Ethics*, 50, 1771-1786.

Beaman, L., Duflo, E., Pande, R., & Topalova, P. (2012). Female leadership raises aspirations and educational attainment for girls: A policy experiment in India. *Science*, 335, 582-586.

Bear, S., Rahman, N., & Post, C. (2010). The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics*, 97, 207-221.

Carter, N.M. & Wagner, H.M. (2011). *The bottom line: Corporate performance and women's representation on boards (2004-2008)*. Retrieved from Catalyst Knowledge Center website: http://www.catalyst.org/system/files/the_bottom_line_corporate_performance_and_women%27s_representation_on_boards_%282004-2008%29.pdf

Catalyst. (2017a). *Women on corporate boards globally*. Retrieved from Catalyst Knowledge Center website: http://www.catalyst.org/knowledge/women-corporate-boards-globally#footnote22_ez6thja

Catalyst. (2017b). *Women CEOs of the S&P 500*. Retrieved from Catalyst Knowledge Center website: <http://www.catalyst.org/knowledge/women-ceos-sp-500>

Correll, S. & Simard, C. (2016, April 26). Research: Vague feedback is holding women back. *Harvard Business Review*, Retrieved from <http://hbr.org/2016/04/research-vague-feedback-is-holding-women-back>

Dobbins, F. & Kalev, A. (2016). Why diversity programs fail, and what works better. *Harvard Business Review*, 94 (7/8), 52-60. Retrieved from <https://hbr.org/2016/07/why-diversity-programs-fail>

Ferdman, B. M. (2014). The practice of inclusion in diverse organizations: Toward a systemic and inclusive framework. In B. M. Ferdman & B. R. Deane (Eds.). *Diversity at work: The practice of inclusion* (pp. 3-54). San Francisco, CA: Jossey-Bass.

Ferdman, B.M. (2017). Paradoxes of inclusion: Understanding and managing the tensions of diversity and multiculturalism. *Journal of Applied Behavioral Science*, 53(2), 235-263. <http://doi.org/10.1177/0021886317702608>

Ferdman, B. M., Barrera, V., Allen , A., & Vuong , V. (2009, August). Inclusive behaviors and the experience of inclusion. In B. G. Chung (Chair), *Inclusion in organizations: Measures, HR practices, and climate*. Symposium presented at the 69th Annual Meeting of the Academy of Management, Chicago.

Ferdman, B.M. & Deane, B.R. (Eds.). (2014). *Diversity at work: The practice of inclusion*. San Francisco, CA: Jossey-Bass.

Galia, F. & Zenou, E. (2012). Board composition and forms of innovation: Does diversity make a difference? *European Journal of International Management*, 6, 630-650.

Guynn, J. (2015, May 12). Google's 'bias-busting' workshops target hidden prejudices. *USA Today*. Retrieved from <http://www.usatoday.com/story/tech/2015/05/12/google-unconscious-bias-diversity/27055485>

Herrman, S.D., Adelman, R.M., Bodford, J.E., Graudejus, O., Okun, M.A., & Kwan, V.S.Y. (2016). The effects of a female role model on academic performance and persistence of women in STEM courses. *Basic and Applied Social Psychology*, 5, 258-268.

Hunt, V., Layton, D., & Prince, S. (2015). *Why diversity matters*. Retrieved from McKinsey and Company website: <https://www.mckinsey.com/business-functions/organization/our-insights/why-diversity-matters>

Jackson, S.E. & Associates. (1992). *Diversity in the workplace: Human resources initiatives*. New York: Guilford.

King, E.B. & Cortina, J.M. (2010). The social and economic imperative of lesbian, gay, bisexual, and transgendered supportive organizational policies. *Industrial and Organizational Psychology*, 3, 69-78.

Kostoulas, K. (2016). *Three reasons why diversity and inclusion are critical in your HCM product roadmap*. Retrieved from Gartner website: <http://www.gartner.com/doc/3464850/reasons-diversity-inclusion-critical-hcm>

McCormick, H. (2016). *The real effects of unconscious bias in the workplace*. Retrieved from University of North Carolina Kenan-Flagler Business School Executive Development website: <http://www.kenan-flagler.unc.edu/~media/Files/documents/executive-development/unc-white-paper-the-real-effects-of-unconscious-bias-in-the-workplace-Final>

McGregor, J. (2014, September 24). More women at the top, higher returns. *The Washington Post*. Retrieved from <http://www.washingtonpost.com/news/on-leadership/wp/2014/09/24/more-women-at-the-top-higher-returns>

McGregor, J. (2017, June 7). The number of women CEOs in the *Fortune* 500 is at an all-time high—of 32. *The Washington Post*. Retrieved from <http://www.washingtonpost.com/news/on-leadership/wp/2017/06/07/the-number-of-women-ceos-in-the-fortune-500-is-at-an-all-time-high-of-32>

Miller, T. & Triana, M.D.C. (2009). Demographic diversity in the boardroom: Mediators of the board diversity-firm performance relationship. *Journal of Management Studies*, 46, 755-786.

Mor Barak, M. E. , & Cherin , D. A. (1998). A tool to expand organizational understanding of workforce diversity: Exploring a measure of inclusion-exclusion. *Administration in Social Work*, 222(1), 47-64.

Moran, G. (2017, January 23). How these top companies are getting inclusion right. *Fast Company*. Retrieved from <http://www.fastcompany.com/3067346/how-these-top-companies-are-getting-inclusion-right>

Nielsen, T.C. & Kepinski, L. (2016). *Inclusion nudges guidebook: Practical techniques for changing behaviour, culture & systems to mitigate unconscious bias and create inclusive organizations* (2nd ed.). Charleston, SC: CreateSpace Independent Publishing.

Post, C. & Byron, K. (2015). Women on boards and firm financial performance: A meta-analysis. *Academy of Management Journal*, 58, 1546-1571.

Roberson, Q.M. (2006). Disentangling the meanings of diversity and inclusion in organizations. *Group & Organization Management*, 31, 212-236.

Sabat, I., Bolunmez, B., King, E., Lindsey, A., Gulick, L., & Choos, L. (2016, April 15). Targeting social dominance to improve diversity training outcomes. In A. Lindsay & V. Gilrane (Chairs), *Novel approaches for enhancing diversity training effectiveness in the workplace*. Symposium conducted at the 31st Annual Conference of the Society for Industrial and Organizational Psychology, Anaheim, CA.

Scheiber, N. (2015, November 2). Fake cover letters expose discrimination against disabled. *New York Times*, p. B1. Retrieved from: <https://www.nytimes.com/2015/11/02/upshot/fake-cover-letters-expose-discrimination-against-disabled.html>

Sherbin, L. & Rashid, R. (2017, February 1). Diversity doesn't stick without inclusion. *Harvard Business Review*. Retrieved from <http://hbr.org/2017/02/diversity-doesnt-stick-without-inclusion>

Shyamsunder, A., Burlacu, G.I., Eagly, A.H., Ferdman, B.M., & Nugent, J.S. (2017, April 27). *New Directions: Enhancing diversity and inclusion research and practice*. Panel discussion presented at the 32nd Annual Conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

SIOP. (2016). SIOP announces top 10 workplace trends for 2017. Retrieved from Society for Industrial and Organizational Psychology website: http://www.siop.org/article_view.aspx?article=1610

Stamper, C. L., & Masterson, S. S. (2002). Insider or outsider? How employee perceptions of insider status affect their work behavior. *Journal of Organizational Behavior*, 233(8), 875-894. <http://doi.org/10.1002/job.175>

Sterzing, P.R., Gartner, R.E., Woodford, M.R., & Fisher, C.M. (2017). Sexual orientation, gender, and gender identity microaggressions: Toward an intersectional framework for social work research. *Journal of Ethnic & Cultural Diversity in Social Work*, 1-2, 81-94.

Strauss, K. (2016, April 6). Why women on company boards boost performance. *Forbes*. Retrieved from <http://www.forbes.com/sites/karstenstrauss/2016/04/06/why-women-on-company-boards-boost-performance>

Terkel, A. (2014, June 30). LGBT applicants less likely to be called back for interviews with federal contractors, study shows. *Huffington Post*. Retrieved from http://www.huffingtonpost.com/2014/06/30/lgbt-job-applicants-discrimination_n_5538195.html

Watts, A.W. (2014, June 2). Why does John get the STEM job rather than Jennifer? Retrieved from The Clayman Institute for Gender Research, Stanford University, website: <http://gender.stanford.edu/news/2014/why-does-john-get-stem-job-rather-jennifer>

World Economic Forum (2016). *The Global Gender Gap Report 2016*. World Economic Forum Insight Report. Retrieved from http://www3.weforum.org/docs/GGGR16/WEF_Global_Gender_Gap_Report_2016.pdf

Hiring POTUS: Examining the 2016 Presidential Election Through the Lens of I-O Psychology¹

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Those elected president of the United States (POTUS) assume a position so important they become one of the most powerful people in the world (Ewalt, 2016). It is, therefore, hard to overstate the importance of selecting the right person for the job. As such, presidential elections are extensively studied to better understand voter behavior. These studies are primarily conducted by political scientists, journalists, and pollsters. However, as I-O psychologists, we view the process of electing POTUS as a special case of employee selection. By incorporating principles of employee selection into the study of voter tendencies, this research provides a unique examination of the 2016 presidential election through the lens of I-O psychology.

Several *TIP* articles have been written on the application of I-O psychology to presidential elections. Deselms, Bahls, Campana, and Sachau (2016), for example, interviewed SIOP members and asked them to describe how a system could be designed for selecting, rather than electing, POTUS. Although happy to participate in the thought experiment, many respondents indicated they preferred having an election to a selection system. Riggio (2005) examined the extent to which research on business leaders increases our understanding of how presidential candidates are evaluated. He concluded that research in I-O psychology can be applied to presidential elections but that fundamental differences in the processes used to select presidents and business leaders limits the generalizability of leadership findings. In this study, we investigate the extent to which two concepts that have been reliably shown to influence employers' evaluations of job candidates likewise influence voters' evaluations of presidential candidates. These concepts are beliefs about person-job (PJ) and person-organization (PO) fit.

Research has consistently demonstrated that employers form perceptions of PJ fit (i.e., congruence between an individual's knowledge, skills, and abilities and those that are required to perform the demands of a job; Edwards, 1991) and PO fit (congruence between an individual's personality, values, and goals and those that characterize an organization's unique work environment; Kristof, 1996) during employee selection and that these perceptions positively influence their attraction to job candidates (Kristof-Brown, Zimmerman, & Johnson, 2005). Whereas employers generally believe they can predict candidates' future job performance via perceptions of PJ fit, perceptions of PO fit are believed to predict a variety of outcomes including mental health, pro-social behaviors, and the quality of coworker relationships (Nolan, Langhammer, & Salter, 2016).

Presidential candidates are not evaluated using traditional selection methods (e.g., work samples, personality inventories). Nevertheless, nationally broadcast events like campaign rallies and presidential debates afford voters ample information to form beliefs about PJ and PO fit—much like the way employers form these beliefs about job candidates from the limited information they obtain via LinkedIn profiles and employment interviews. Through these outlets, the messages Secretary Hillary Clinton and President Donald Trump delivered to voters regarding their capability to perform the demands of the presidency differed significantly. Clinton touted her accomplishments as a career politician, whereas Trump espoused his achievements as a prominent businessman. Accordingly, we expected voters' perceptions of PJ fit to differ across candidates, with the candidate voters support being perceived as having the higher level of congru-

ence. Although voters were expected to differ in their perceptions of the candidates' PJ fit, possessing the attributes required to successfully perform the demands of the presidency was expected to be universally attractive. Therefore, consistent with the findings of employee selection research, we expected perceptions of PJ fit to have a positive influence on attraction for all voters.

The messages Hillary Clinton and Donald Trump delivered to voters concerning their fit with the U.S. government were also meaningfully different. Clinton presented herself as a Washington insider having valued relationships with established politicians, whereas Trump presented himself as an outsider wanting to "drain the swamp" that is Washington DC. In accordance with the ways in which they positioned themselves to the public, we expected voters to perceive Clinton as having higher levels of PO fit than Trump regardless of the candidate they support. However, given the tone of their messages about the U.S. government, the relationship between PO fit and attraction was expected to differ among supporters, with perceptions of PO fit having a positive influence on attraction for Clinton supporters and a negative influence on attraction for Trump supporters. In this way, the relationship between PO fit and attraction in the presidential election was expected to deviate from the general findings of employee selection research.

Our Study²

Method

A sample of 180 eligible voters completed an online survey – between September 29 and October 7, 2016 – where they were randomly assigned to evaluate either Hillary Clinton or Donald Trump. At the end of the survey, participants indicated the candidate for whom they intended to vote. Our study thus employed a 2 *candidate evaluated* (Clinton, Trump) x 3 *candidate supported* (Clinton, Trump, Other) quasi-experimental design, with candidates being evaluated by supporters and non-supporters alike. In evaluating the candidates, participants completed measures of *Attractiveness* (Highhouse & Sinar, 2003), *Perceived PJ fit* (Lauver & Kristof-Brown, 2001), *Perceived PO fit* (Cable & Judge, 1996), and *Subjective PO fit*. Whereas the perceived PO fit measure provided information about voters' general beliefs concerning the candidates' fit with typical politicians working in the U.S. Government (e.g., This candidate's values are similar to the values of other politicians in the US government), the subjective PO fit measure provided additional insight about perceived fit on 10 specific attributes from Schwartz's (1992) Universal Human Values, Hofstee, De Raad, and Goldberg's (1992) Big Five Personality Facets, and Jonason and Webster's (2010) Dark Triad Personality Traits. Participants were given an operational definition of each attribute to rate (Table 1), and subjective PO fit scores were created by averaging the absolute values of difference scores between the ratings assigned to U.S. politicians and presidential candidates, with lower values indicating greater levels of fit (Vancouver & Schmitt, 1991).

Table 1
Attributes Included in Subjective PO Fit Measure: Mean Ratings and Relationships With Attraction for Supporters of Each Candidate

Attribute	Description provided to participants	Mean rating given by supporters (1 = <i>strongly disagree</i> , 5 = <i>strongly agree</i>)		Relationship with attraction for supporters (<i>r</i>)	
		Clinton	Trump	Clinton	Trump
<i>Intellect</i>	Has a rich vocabulary; makes insightful contributions	4.18 (.82)	2.92 (1.12)	.84*	.33*

<i>Security</i>	Seeks safety, harmony, and stability in society, relationships, and self	3.49 (1.16)	3.60 (.91)	.76*	.67*
<i>Cooperation</i>	Values cooperation over competition; would not impose his/her will on others	3.43 (1.19)	2.52 (1.05)	.81*	.46*
<i>Morality</i>	Would never cheat; tries to follow the rules	2.65 (1.23)	2.64 (.91)	.76*	.68*
<i>Universalism</i>	Has understanding, appreciation, and tolerance for the welfare of all people	3.76 (1.05)	2.99 (1.26)	.89*	.64*
<i>Machiavellianism</i>	Tends to use manipulation, deceit, or flattery to get his/her way	3.06 (1.46)	3.20 (1.26)	-.77*	-.62*
<i>Psychopathy</i>	Lack remorse; is unconcerned with the morality of his/her actions	2.78 (1.27)	3.76 (1.36)	-.81*	-.33*
<i>Narcissism</i>	Tends to expect others to admire him/her; seeks prestige and status	3.53 (1.16)	3.64 (1.35)	-.53*	.25
<i>Hedonism</i>	Seeks pleasure; is self-indulgent	3.04 (1.08)	4.20 (.87)	-.52*	.28*
<i>Provocativeness</i>	Dares to say anything; is not afraid of providing criticism	2.90 (1.12)	4.68 (.69)	-.54*	.69*

*Note: * indicates p < .05*

Results

As expected, voters' perceptions of PJ fit depended on both the candidate they evaluated as well as the candidate they supported. Voters supporting Hillary Clinton generally perceived her as having greater PJ fit than Trump or Other supporters, and voters supporting Donald Trump, generally perceived him as having greater PJ fit than Clinton or Other supporters (Figure 1). Consistent with the findings of employee selection research, perceptions of PJ fit were positively related to attraction for all voters regardless of the candidate they support. However, for Clinton and Trump supporters, the relationship between PJ fit and attraction was significantly stronger than it was for supporters of other candidates (Figure 2). Finding that beliefs about the candidates' abilities to perform the demands of the presidency had less influence on attraction for supporters of Other candidates than Clinton or Trump supporters (e.g., "What's Aleppo?" – Gary Johnson) is consistent with the notion that third-party votes were largely acts of protest against the major-party candidates (Brown, 2016).

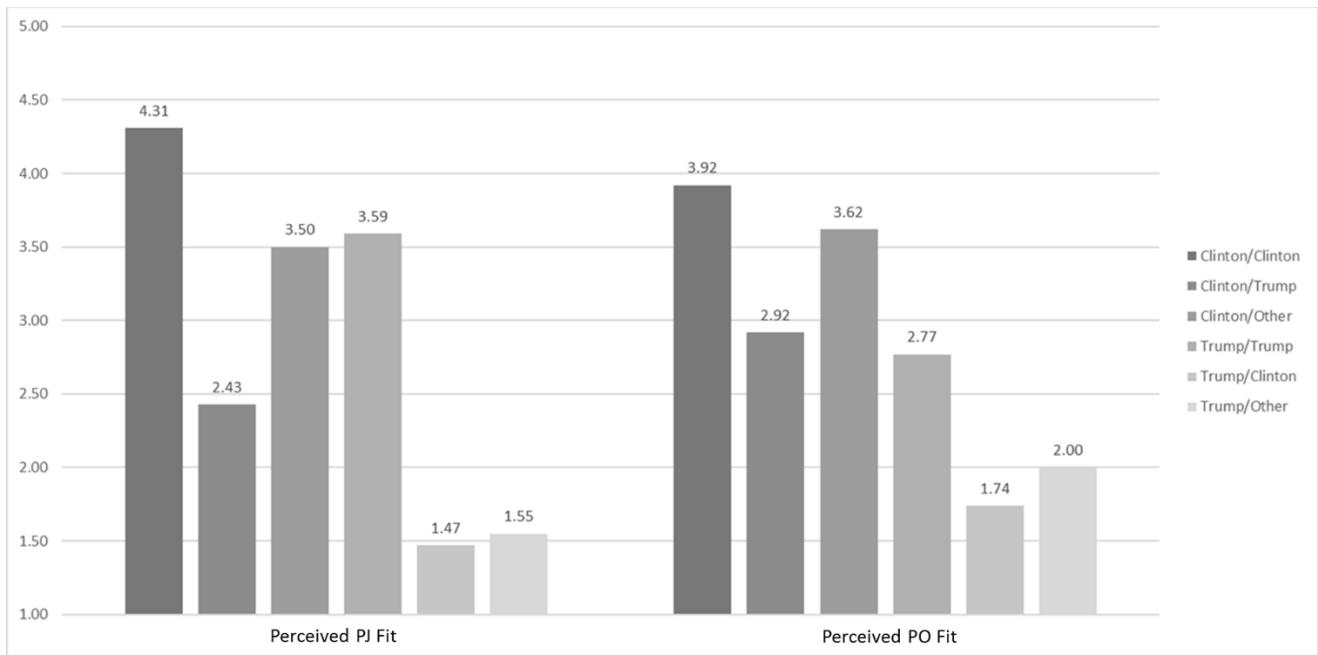


Figure 1: Mean Levels of Perceived PJ Fit and Perceived PO Fit Across Study Conditions (Candidate Evaluated/ Candidate Supported)

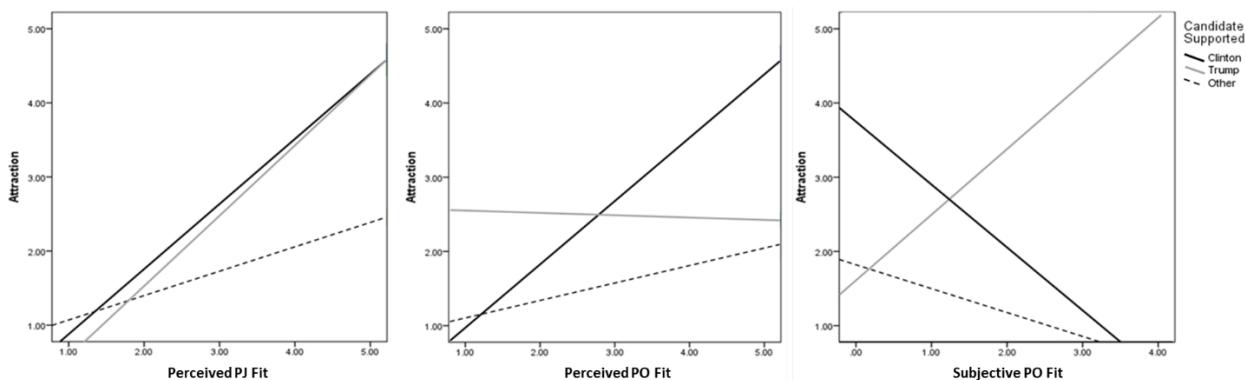


Figure 2: Candidate Support Moderating the Relationships Between Perceived PJ Fit and Attraction (Left), Perceived PO Fit and Attraction (Middle), and Subjective PO Fit and Attraction (Right)

Regarding beliefs about the candidates' fit with the U.S. government, results suggest that both perceived and subjective measures of PO fit were affected by the candidate being evaluated as well as the candidate voters supported. Voters supporting Hillary Clinton or other candidates generally believed that she had greater PO fit than Donald Trump, but Trump supporters did not perceive a significant difference between the candidates. Consistent with the findings of employee selection research, beliefs about PO fit were positively related to attraction for Clinton and other supporters. However, deviating from the results of selection research, beliefs about PO fit were negatively related to attraction for Trump supporters. Exit poll research suggests that Trump supporters were largely dissatisfied with the U.S. government (Lee, Petras, Thorson, Penzenstadler, & Sullivan, 2016). Our findings suggests that hiring an outsider with discrepant personality traits, values, and goals was perceived as an attractive avenue for voters seeking to change the status quo.

Further insight into voters' beliefs about the candidates' demeanors is provided by their ratings of the individual attributes from the subjective PO fit measure. Both Clinton and Trump supporters generally agreed that their candidates valued security, were moderately narcissistic, and low in morality. Whereas Clinton supporters generally agreed that intellect, universalism, and cooperation characterized their candidate, Trump supporters did not agree that he possessed these attributes. Instead, Trump supporters rated him highest in provocativeness, hedonism, and psychopathy. For Clinton supporters, provocativeness and hedonism were perceived as unattractive traits. However, for Trump supporters, these attributes were positively related to attraction. It is possible that Trump supporters viewed hedonism as a celebration of capitalist success (e.g., I'm a winner and deserve a golden apartment) and provocativeness as a necessary catalyst for change in the government.

Conclusions

This research has several noteworthy limitations (e.g., sample size, single-item measures, use of difference scores). Nevertheless, the overall findings of the study support the notion that employee selection research can help predict and explain voter tendencies. The purpose of the study was to examine the extent to which factors that have been shown to influence employment decisions for more traditional jobs also influence employment decisions for POTUS. Consistent with traditional employee selection research, results suggest that voters' evaluations of the presidential candidates were meaningfully related to their beliefs about PJ and PO fit. These constructs are well-understood by I-O psychologists, who are capable of developing lines of research dedicated to more fully understanding their influence on voter behavior. The knowledge generated by these lines of research could be combined with work from political scientists, journalists, and pollsters to provide a more complete understanding of presidential elections. Echoing the advice of Riggio (2005), however, scholars should be cautious about generalizing the results of employee selection research to elections at this time. It appears, for example, that Trump supporters' dissatisfaction with the U.S. government affected the relationship between PO fit and attraction in a way that is unlikely to be seen in typical organizations unless those with hiring power are specifically looking to onboard dissidents.

Notes

¹ This research was conducted as part of the program of activities surrounding the first 2016 Presidential Debate hosted by Hofstra University.

² Detailed information about the methodology and results of this study are available from the corresponding author.

References

Brown, L.M. (2016, July 27). *Third party votes mean less of a mandate to govern*. Retrieved from <https://www.nytimes.com/roomfordebate/2016/07/27/could-third-parties-determine-this-election/third-party-votes-mean-less-of-a-mandate-to-govern>

Cable, D. M., & Judge, T. A. (1996). Person-organization fit, job choice decisions, and organizational entry. *Organizational Behavior and Human Decision Processes*, 67(3), 294-311. doi:10.1006/obhd.1996.0081

Deselms, J., Bahls, L., Campana, L., & Sachau, D., (2016) Using science to select the president. *The Industrial Organizational Psychologist* 54(2), Retrieved from <http://www.siop.org/tip/backissues/TIPFall16.aspx>

Edwards, J. R. (1991). Person-job fit: A conceptual integration, literature review, and methodological critique. In C. L. Cooper & I. T. Robertson (Eds.), *International review of industrial and organizational psychology* (Vol. 6, pp. 283-357). Oxford, UK: John Wiley.

Ewalt, D. M. (2016, December 14). *The world's most powerful people 2016*. Retrieved from <https://www.forbes.com/sites/davidewalt/2016/12/14/the-worlds-most-powerful-people-2016/#295d0e9e1b4c>

Highhouse, S., Lievens, F., & Sinar, E. F. (2003). Measuring attraction to organizations. *Educational and Psychological Measurement*, 63(6), 986-1001. doi:10.1177/0013164403258403

Hofstee, W. K., de Raad, B., & Goldberg, L. R. (1992). Integration of the Big Five and circumplex approaches to trait structure. *Journal of Personality and Social Psychology*, 63(1), 146-163. doi:10.1037/0022-3514.63.1.146

Jonason, P. K., & Webster, G. D. (2010). The dirty dozen: A concise measure of the dark triad. *Psychological Assessment*, 22, 420-432. doi:10.1037/a0019265

Kristof, A. L. (1996). Person-organization fit: An integrative review of its conceptualizations, measurement, and implications. *Personnel Psychology*, 49(1), 1-49. doi:10.1111/j.1744-6570.1996.tb01790.x

Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individual's fit at work: A meta-analysis of person-job, person-organization, person-group, and person-supervisor fit. *Personnel Psychology*, 58(2), 281-342. doi:10.1111/j.1744-6570.2005.00672.x

Lauver, J. L., & Kristof-Brown, A. (2001). Distinguishing between employees' perceptions of person-job and person-organization fit. *Journal of Vocational Behavior* 59(3), 454-470. doi:10.1006/jvbe.2001.1807

Lee, J., Petras, G., Thorson, M. Penzenstadler, N. & Sullivan, S. (2016). *Exit polls by the numbers: Trump capitalizes on voter dissatisfaction*. Retrieved from: <https://www.usatoday.com/story/news/politics/elections/2016/2016/11/09/exit-polls-numbers-trump-capitalizing-dissatisfaction/93500118/>

Nolan, K. P., Langhammer, K., & Salter, N. P. (2016). Evaluating fit in employee selection: Beliefs about how, when, and why. *Consulting Psychology Journal: Practice and Research*, 68(3), 222-251. doi:10.1037/cpb0000065

Riggio, R. (2005). It's the leadership, stupid; An I-O psychology perspective on the 2004 U.S. presidential election. *The Industrial Organizational Psychologist* 42(3), 21-26.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1-65.

Vancouver, J. B., & Schmitt, N. W. (1991). An exploratory examination of person-organization fit: Organizational goal congruence. *Personnel Psychology*, 44, 333-352. doi:10.1111/j.1744-6570.1991.tb00962.x

Members in the Media

Barbara Ruland
SIOP Administrative Office

SIOP members continue to make news with their scientific developments and lead the way with their informed application of I-O psychology to real world business challenges.

This column is a quarterly round-up of SIOP members' media mentions. Use it to keep up with your colleagues, to look for project collaborators, and to spark ideas for research or programs.

Although we scan the media regularly, we don't catch everything, so we urge you to [send in your media notices](#) for sharing on SIOP social media and in this column. Here are mentions we found from August to early November.

Organizational Culture

Several topics related to office culture received coverage. Predictably, sexual harassment and gender diversity have gotten a lot of attention, triggered by the allegations about Harvey Weinstein.

Katina Sawyer and a colleague coauthored an essay for [The Conversation](#) website about how companies can rid their culture of sexual harassment in October. It was picked up by several outlets including [Business Insider](#) and Detroit-based [Legalnews.com](#). *Mother Jones* referenced **Elissa Perry's** research in an article about making [sexual harassment training](#) more effective.

Popular interest has been sparked by the harassment scandals, but workplace diversity is a core subject for I-O psychologists.

In August, **Stefanie K. Johnson** contributed pieces on [gender gaps in the workplace](#) and [championing diversity](#) to the *Harvard Business Review*. **Tacy Byham** discussed [gender diversity programs](#) in an article for *Entrepreneur*.

Katherine O'Brien provided straightforward advice in the irreverent "[office survival manual](#)" for women called *Feminist Fight Club*, highlighted by True Viral News.

University of Georgia Doctoral Candidate **Rachel Williamson** and UGA Assistant Professor **Malissa Clark** presented research on "Crossover Effects of Sexual Orientation Disclosure at Work" at the 2017 SIOP Conference in Orlando. The research, published in the *Journal of Vocational Behavior*, was covered by outlets including the Philadelphia [Inquirer](#), [MedicineNet](#), and the LGBT publication, the *Washington Blade*.

Age diversity is also a trending business topic driven by the aging workforce. [Industrial Safety and Health News](#) published a notice about the National Employ Older Workers Week webinar presented by the National Institute for Occupational Safety and Health and featuring SIOP members **Donald Truxillo**, **Alyssa McGonagle**, and **Ruth Finkelstein**.

Mo Wang was featured in the *APA Monitor* Trends Report that puts diversity and harassment issues into perspective. The article explored costs incurred by organizations that don't provide employees [psycho-social safety in the workplace](#).

Supporting a safety culture is the subject of **Erin Bowen**'s work at Avery Riddle Aeronautical University, as profiled in their quarterly magazine. **Jennifer Rineer** discussed the challenges of communicating about safety to diverse audiences in a SIOP placement for *Safety and Health* magazine.

Other workplace culture items included pieces on the Amazon purchase of Whole Foods, featuring **Paul Warner** and an exploration of the impact of having a second Amazon headquarters on culture, featuring **Adam Grant**.

Amy Grubb offered advice for handling organizational change; **Tom O'Neill** discussed the importance of trust in a telework environment; **Dan Russell** discussed the changing mores about cursing in the workplace; and **Charlotte Fritz** summed up the characteristics of great workplace cultures.

Engagement, Turnover, Leadership, and Supervision

Employee engagement and turnover are intertwined with organizational culture, as are leadership and supervision. Each of these topics have recently garnered media mentions.

Michele Graef received coverage in regional publications for her work to reduce staff turnover at Nebraska child welfare agencies in Nebraska.

Quartz and Government Executive picked up a story featuring **David Ballard** about the importance of supportive management to employee engagement, as revealed by the 2017 APA Job Skills Training & Career Development Survey.

Paul Baard discussed the use of goal setting to increase motivation, and **Brenda Fellows** contributed to an article about employee book clubs.

Tomas Chamorro-Premuzic and **Lewis Garrad** discuss the importance of motivation to productivity, organizational climate, and success in an article for *Harvard Business Review*, then offer strategies employees can use to boost their own engagement level.

Associations Now related the findings of a study **John Antonakis** coauthored (previously reported on by SIOP) on the relationship between leader success and intelligence and the *Harvard Business Review* covered research on the interplay of charisma and perceived leader success, authored by **Jasmine Ver-gauwe, Bart Wille, Joeri Hofmans, Robert B. Kaiser, and Filip De Fruyt**.

Forbes profiled **Dale Rose**'s work with a client in an article on great leaders, and CNBC.com quoted Adam Grant on the same subject in an article about Richard Branson.

Alison Eyring explored common mistakes made by well-meaning executives in an article on transformational leadership, and **Paul Baard** interviewed **Christina Maslach** on the contagion effect of managerial burnout.

Billie Blair offered advice on giving constructively negative feedback and **Ron Riggio** detailed behaviors of likeable bosses.

Stocking the leadership funnel also received media coverage. Tomas Chamorro-Premuzic, **Seymour Adler**, and Robert B. Kaiser wrote that there are three factors contributing to performance in “What Sci-

ence Says About Identifying High-Potential Employees" for the *Harvard Business Review*. A *Business Insider* writer used that article to launch an expanded discussion including references to **Frank L. Schmidt** and Adam Grant in an article that was also picked up by The Hour and Global Times.

Training

Local media and industry publications mentioned SIOP members in their discussion of programs, strategy, and paradigms in training. **Eric Surface** and **Kurt Kraiger** advocated a paradigm shift in respect to evaluating L&D programs; and **Tiffany Poeppelman** discussed how to bring L&D into the mainstream of business strategy and decision making.

Konstantin Cigularov, **Phil Dillulio**, and colleagues at Old Dominion University were cited for their work helping the Combat Wounded Coalition develop a leadership training program for service members transitioning to civilian life.

Recruiting and Selection

Fads, myths, and overgeneralizations about recruiting and selection took fire from SIOP members in recent weeks. Tech topics including testing, using algorithms in selection and screening for social media use were also covered.

Sy Islam helped *Recruiter* bust 10 recruiting myths, Frank Schmidt and Brenda Fellows discussed interview practice fads for *Fast Company*, and **Lisa Finkelstein** warned against generalizing about applicants based on their age.

A prolific I-O psych blogger quoted Adam Grant on a better version of an interview question known as the LAX test; **Elliot Lasson** discussed using social media in the selection process for Inc.com

Nathan Kuncel discussed some advantages of using AI in the selection process for *Workforce* magazine.

Other Technology Topics

Alison Eyring conducted an experiment with an AI based scheduler and shared what she learned about humans and computers working together for Inc.com. **Frederick Morgeson** injected a note of healthy skepticism into an article about gamified selection for *Bloomberg*.

I-O in Popular Culture

It's no secret that the science of I-O can be applied to any life situation, and I-O psychologists are frequently asked to provide insights for the popular press.

The *Houston Chronicle* recently picked up a list of 10 daily habits for success, originally published by *Entrepreneur* and featuring **Michael Woodward**. Paul Baard shared thoughts on meaningful communication in his column for the New Hampshire *Union Leader*.

In response to the tumultuous political atmosphere, **David Chan** wrote about "the good, the bad, and the ugly" of political humor in his column for the Singapore Straits Times. Adam Grant interviewed Ken Burns and Lynn Novick for *Esquire*, discussing their series documenting another moment of historical upheaval, "Vietnam."

Amy Cooper Hakim shared advice for prospective brides in *Vogue*, and she also discussed declining recommendation requests for *Fast Company*.

That outlet also offered advice for job seekers from **Brad Harris** and **Jill Strange** on managing first impressions. CNBC.com applied Adam Grant's thoughts on give and take to networking.

Using I-O Research in Other Fields

Publications serving other professions regularly apply I-O to their fields. **Sarah Fallaw** was the featured guest on a podcast for financial advisors, discussing the use of behavioral assessment tools to evaluate a client's wealth building potential. Paul Warner penned an article for CMS Wire, urging marketers to integrate employee voice into their customer experience initiatives. Adam Grant was quoted by a magazine for chief information officers on knowing when to call it quits on a technology project.

Notes on the Profession

Career information, including salary benchmarks, job category growth, and career inspiration, is interesting for working professionals and potential students alike. We found these career-related items in recent weeks.

David Chan wrote a piece for the Singapore Straits Times about how his early work as a police officer fed his interest in the profession of I-O psychology. The *APA Monitor on Psychology* has recently released information about the profession in two separate reports. The earnings report shows that I-O psychologists are at the top of the pay scale. The popular trends report cites growing interest in the discipline, while cautioning about a potential oversupply of qualified applicants and the projected new jobs in the field.

Don't forget to include SIOP on your mailing list for notices of media mentions and professional accomplishments. Best wishes for 2018!

Foundation Spotlight: Creative Imaginings

Milton D. Hakel, PhD

In the October issue of *TIP*, I wrote that one sure way to improve applied psychological science is to contribute your time, talent, and treasure to the SIOP Foundation. Now I invite you to tell us about your dreams, your creative imaginings for our field of applied organizational science.

I-O psychology has grown steadily over the past 5 decades. It continues growing, yet it has lost none of its vast potential for advancing human welfare. We are putting creativity into our work. Day in and day out we “give at the office.”

We also give beyond our offices. That’s where some of the dreams come in. I entered the field in the days when we were known as industrial psychology and *pro bono* R&D was rare. Except for the topic of employee selection, the implications of research for public policy were seldom discussed. How we’ve changed.

And more change will be coming, some of it welcome and some of it thrust upon us. As always, creative imaginings will be needed. They will help us to evaluate opportunities and threats, to set priorities, and to take action.

For example, suppose there was a grant source for strengthening I-O psychology masters and doctoral programs, or providing midcareer refreshment and development for professionals. How about fostering field research consortia? These imaginings hit pretty close to home, but they barely scratch the surface. Send your creative imaginings to any or all of us listed below.

The Foundation connects donors to the practitioners and researchers who make our field vital. Your calls and questions to the SIOP Foundation are always welcome. Join us in building any of the endowments, or begin a current project through the Fund for the Future. Contribute or make a pledge at <http://www.siop.org/foundation/donate.aspx>.

Let's get on with improving psychological science. And keep on giving, both at the office and wherever our applied science takes us.

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SIOP 2018 Chicago: 33rd Annual Conference: April 19-21, 2018 (Preconference Workshops April 18, 2018)

Tracy Kantrowitz
Program Chair, SIOP 2018
CEB Gartner

SIOP 2018 will feature the “Team SIOP” theme by highlighting collaboration, demonstrating impact through partnerships, and featuring multidisciplinary approaches to advance our science and practice, with several new features and an outstanding lineup of team-focused sessions! Planning for this 33rd Annual Conference in Chicago is well underway, so consider this your official notice to mark your calendars. Don’t miss this chance to join the “team”!

We received over 1,579 submissions for the 2018 SIOP conference in Chicago! Around 980 submissions were accepted for what is expected to be a first-rate conference. Back by popular demand, sessions presenting **reproducible research** will accelerate our science and practice by educating our members about new research and analysis techniques through the sharing of data, code, and syntax. **New for 2018**, the “**Reviewer’s Choice**” block (Friday at 1:00) will feature the highest rated sessions across a diverse array of content. Also new is the “**SIOP Select**” designation that will unite special, feature, theme track, and invited sessions under one label to highlight sessions cultivated by SIOP volunteers and committees on high-demand, high-impact topics that are broadly applicable and add value across the membership. Finally, for members seeking to learn about cutting-edge topics in research methods, measures, and statistics, “**Methods Mania**” will present the highest-rated methods tutorials and sessions in a one-stop location (Sheraton 4) throughout the program. Through these new features, the program aims to bring together like-minded researchers and practitioners, and several new special sessions that you won’t want to miss!

In addition to the peer-reviewed master tutorials, debates, symposia, panels, posters, roundtables, and alternative session types, the Program Committee has been working tirelessly to assemble a quality collection of Friday Seminars, Invited Sessions, Featured Sessions, Communities of Interest, a Master Collaboration, and a full-day President’s Theme Track (on Thursday). A preview of these sessions is offered below, with more program details to come as the conference approaches.

Thursday Theme Track

The Program Committee is pleased to offer, “**TeamSIOP Ventures Into New Playing Fields**,” an interactive theme track that highlights boundary-breaking examples of I-O impact within and across multifaceted teams. For those unfamiliar, the Theme Track is effectively a conference within the broader conference—a full day of programming designed to bring President **Fred Oswald’s** vision of **Team SIOP** to life. The Theme Track will feature extraordinary and unconventional ways I-O research and practice fuels inter-disciplinary science, innovation, and social change. Chair **Tracey Rizzuto** and her committee are assembling an exceptional lineup of presenters and call for an engaged SIOP audience to debate, create, learn from, and playfully “compete” in our dynamic interactive sessions. The sessions focus on:

- **“I-O-Speak” in Multidisciplinary Teams:** This session will highlight effective models of I-Os who work in multidisciplinary settings, and offer tips and skills training on how to communicate our professional strengths and lend I-O science and practice contributions to endeavors outside of the field.
- **I-O Igniting Innovation:** This session is focused on groundbreaking innovations and patents that were catalyzed by I-O scientists, practitioners, and consultant. It will feature one of Chicago’s

recently recognized “most innovative” organizations and illustrate how success is amplified when I-O is part of the team.

- *Using I-O to Combat Community Violence (Chicago Case Study):* This session will highlight ways I-Os can ease the complexities of public-private partnerships and assist in tackling root causes of violence in their communities. The panel features a diverse selection of Chicago community leaders from law enforcement, faith-based community, small business, and neighborhood association organizations.
- *TEAM SIOP Gameshow:* Attention all board game and game show fans! This playful, interactive session will feature I-O “celebrities” and enthusiastic audience members as contestants in a fun-filled battle of wits and I-O prowess. The winner will be named Team SIOP Theme Track Champ!

The Theme Track promises to provide a day of engaging, provocative, and inspiring sessions that are interactive—bring your laptops, cell phone, and brilliant minds! The sessions are designed to provoke discussion, the exchange of ideas, and playful debate. These sessions will be scheduled back to back in the same room. We invite you to stay all day or attend only the sessions of most interest to you.

Special Sessions

Open to all attendees, the 2018 SIOP Special Sessions include invited sessions, master collaboration, and featured sessions architected by Special Sessions Chair **Levi Nieminen**. Although some of the details are still forthcoming, we want to share what we already know about the lineup of the sessions. No signup is necessary for these sessions, and all SIOP attendees are welcome.

Special Session: Solutions for Sexual Harassment: Lessons From Federal Agencies

Vicki J. Magley (Chair), Armando X. Estrada (Presenter), Cynthia H. Ferentinos (Presenter), and Samantha M. Daniel (Presenter)

In this session, the audience will discuss findings from studies of sexual harassment of federal employees conducted by three different federal agencies. Findings related to the character, context, correlates, and consequences of unwanted gender-related behaviors in the workplace are presented, and intervention and prevention efforts are discussed with active participation from the audience.

Special Session: A SIOP Machine Learning Competition: Learning by Doing

Dan J. Putka (Cochair), Alexander Schwall (Cochair), Ben Taylor (Co-chair)

This special session will summarize the pilot test of a novel way for annually educating SIOP’s membership about advances in machine learning. In advance of the conference, we provided a dataset to several “teams” of I-Os across academe and practice, and hosted a competition to build the most generalizable prediction model. During the session, top performing teams will describe their approaches.

Special Session: SIOP Virtual Debate: Have We Lost Our Way?

Craig R. Dawson (Cochair), Ken Lahti (Cochair), Nancy Tippins (Panelist), Sayeedul Islam (Panelist), Taylor Peyton Roberts (Panelist), Jose Cortina (Panelist), Deniz Ones (Panelist), Michael Moon (Panelist)

Do you have something to say about the future of I-O, but you’re not sure how to make your voice heard? Two teams will debate with live real-time input from audience via Twitter. Debate hosts will respond to Twitter questions and synthesize points made by virtual participants. This session opens the debate to everyone, encouraging participation and creating the opportunity for unusual candor.

Featured Session: Innovators in the Field: Advice From Practice Award Winners

Nancy Tippins (Host), William H. Macey (Presenter), William Shepherd (Presenter), and Robert Ployhart (Presenter)

Establishing your career as a change agent and building industry-shaping collaborations are skills demonstrated by some of the greatest disruptors in I-O psychology. This session explores strategies that drive these individual and team-based successes, presented by our recent winners of the Distinguished Professional Contributions Award and M. Scott Myers Award.

Featured Session: Building a Pipeline and Sustaining Success as an I-O Scientist

John Hollenbeck (Host), Bradford Bell (Host), Ruth Kanfer (Host), Christopher Barnes (Presenter), Steve Kozlowski (Presenter), and John Mathieu (Presenter)

A fast start and commitment to adaptability are key ingredients for maintaining scientific excellence as an I-O psychologist. Recent winners of the Distinguished Early Career Science Award and Distinguished Science Award join forces to showcase tips and strategies for building a fast-rising career and sustaining a pipeline of excellence as an I-O scientist.

Featured Session: Navigating a Meaningful I-O Career: Insights from Award Winners

Eleni Lobene (Host), William Shepherd (Host), Talya Bauer (Host), Donald Truxillo (Presenter), Anthony Boyce (Presenter), and Megan Leasher (Presenter)

The future of I-O psychology is changing as industries, technologies, and science rapidly evolve. To establish success, early career I-Os need top-notch training and continued agility. SIOP brings together recent winners of the Distinguished Teaching and Distinguished Early Career Practice Awards to share best practices in teaching and building an impactful career as an I-O practitioner.

Friday Seminars

Friday Seminars offer a unique educational opportunity within the body of the conference. These 3-hour sessions are the only extended-length sessions on the schedule and take place on Friday. The sessions are intended to provide a rich immersion experience for attendees about cutting-edge content areas presented by true content experts. Each session is shaped around learning objectives in order to ensure that professional developmental goals are met.

Space is limited and Friday Seminars do sell out, so we encourage you to register early to secure your spot. The Friday Seminars are continuing education credit opportunities (please see <http://www.siop.org/Conferences/18con/Regbk/fridayseminars.aspx> for more information).

This year's Friday Seminars committee, led by **Richard Chambers**, will offer the following six sessions:

A Crash-Course in R Basics!

8:00am–11:00am, Huron Room

Paul Bliese

The open-source language R has emerged as one of the dominant tools for statistical analyses. In this hands-on seminar, we work with R-Studio and learn fundamental skills such as bringing in data from a variety of formats. We also cover concepts such as libraries and workspaces, and perform basic analyses.

How to Conduct Organizational Network Analysis to Understand Talent

8:00am–11:00am, Ontario Room

Meghan R. Lowery and Christoffer Lynggaard Kønigsfeldt

This seminar explores the use of Organizational Network Analysis to create statistical and technical models that describe communication and social networks in organizations. Learn about different types, analytical techniques, plan for tactical execution, and how to sell business leaders on utilizing this method! Real organizational examples provided.

Tools or Toys? Evaluating New Approaches to Prehire Assessment

11:30am–2:30pm, Huron Room

Ben Hawkes

New approaches to online assessment challenge the familiar text-based, multiple-choice format with methods that incorporate gaming, video, AI, and so on. Do these approaches fulfill a promise of improving utility, efficiency, and candidate experience? This seminar provides an overview, demonstration, and critical analysis of methods from a test user's POV.

Learning How to Use Unobtrusive Data Sources in Organizations

11:30am–2:30pm, Ontario Room

Andrew Knight

Innovative unobtrusive methods—such as digital trace data and wearable technology—hold great promise for researchers and practitioners seeking to understand workplace behavior. This session provides an application-focused introduction to these methods to identify opportunities and learn a process for implementing new unobtrusive methods at work.

Creating Dynamic Data Visualizations Through Visual Note Taking

3:00pm–6:00pm, Huron Room

Dusty Folwarczny

Creative and dynamic data visualizations are powerful tools for I-O psychologists and HR professionals. Often, consumers of our research are not data savvy; therefore, tables and charts may not have the desired impact. This seminar will expand creative toolkits and introduce the art of visual note taking, applying this skill to data visualization.

Driving Innovation in Organizations by Fostering Effective Change

3:00pm–6:00pm, Ontario Room

Sam Hunter and Lily Cushenberry

Sustainable, novel, and useful change is important; however, natural bias against new things may inhibit innovation. We'll discuss highs and lows of generating breakthrough ideas and managing the failures that lead to them. This interactive session will cover the latest research and provide practical, evidence-based guidelines for enhancing innovation.

Communities of Interest

Interested in an “open space” SIOP format that is attendee driven, informal, and focused on a topic of particular interest to you? Communities of Interest allow you to meet new people, catch up with colleagues, learn about new advances, discuss ideas, have a provocative discussion, and play a part in driving breakthrough research and practice ideas on a hot topic at the forefront of I-O psychology. These sessions are designed to enhance existing communities and create new ones around common themes or interests. They have no chair, presenters, discussant, or even slides. Instead, they are discussions shaped on the basis of the audience and informally moderated by one or two facilitators with insights on a topic of interest. These are great sessions to attend if you would like to meet potential collaborators, generate ideas, have stimulating conversations, meet some new friends with common interests, or expand your network to include other like-minded

SIOP members. **These 50-minute conversations run continuously on Thursday and Friday in room Mayfair.**

Chair **Dev Dalal** and the rest of the COI Committee have lined up some great sessions and facilitators for this year's conference, covering a wide range of topic areas:

Thursday

Technology in Assessment: Moving From Reactive to Proactive

Hosts: Sarena Bhatia and Richard N. Landers

Let's Talk About Dirty Data! Grappling With Issues of Real-World Data

Hosts: Samuel T. McAbee and Bobby Naemi

Alternative Work Arrangements: Agile Project Management Methods Are Here!

Hosts: Jasmine Langevine and Mike Morrison

Communicating With Organizational Leaders: Selling Our Intervention

Hosts: Lilly Lin and Kevin P. Nolan

I-O and Job Automation: Implications for the Future of Work

Hosts: Neil Morelli and Brendan Neuman

Recruitment in Today's Workplace: Current Practices and Research Needs

Hosts: Robert Gibby and Richard Landers

Friday

Affect and Emotions in the Workplace: Current Findings and Practical Implications

Hosts: Sigal Barsade and Malissa Clark

How Can We Eliminate Sexual Harassment

Hosts: Armando Estrada and Vicki Magley

Fostering Science–Practitioner Collaboration: Employee Well-Being

Hosts: Tori Crain and Jennifer Rineer

Collaborating Across Scientific Disciplines: Making I-O More Cross Disciplinary

Hosts: Dorothy R. Carter and Autumn D. Krauss

Communicating I-O Psychology to Society: Taking a Seat at the Decision Table

Hosts: Stephen Stark and Stephanie Zajac

Fostering Science–Practice Collaboration: Recruitment and Candidate Experience

Hosts: Bing Chun Lin and Julie McCarthy

Taking Advantages of Breaks at Work

Hosts: Sooyeon Kim and Alvin (Qikun) Niu

Mindfulness at Work: Opportunities and Challenges for Research and Practice

Hosts: Ute Hüscher and Marian N. Ruderman

Plan Now to Attend the 2018 SIOP Preconference Consortia!

SIOP is continuing its efforts to create career pipelines for ALL members. On Wednesday **April 18, 2018**, the SIOP Consortia Committee will host four (4) partially integrated consortia that will help meet the educational and development goals of all in attendance. An overarching goal of the consortia is to provide a socialization experience and networking opportunity to graduate students and early career professionals embarking on their career pathways. Thus, we are continuing the 3-decade tradition of hosting consortia to graduate students (**Master's Consortium** and **Doctoral Consortium**), the more recently added **Junior Faculty Consortium**, and, due to its success last year, we are once again offering the **Early Career Practitioner Consortium**!

This (4) part program provides a well-rounded, comprehensive career pipelines from graduate student training into early career transitions for I-O psychologists at different career stages and in both applied and academic professions. Consortia participants gain the benefit of information exchange and networking with others within the same career track AND similar stage of career.

Past participants have nothing but good things to say about their experiences. Some quotes:

I learned a lot of information during the doctoral consortia that not only helped me land my first applied job but also helped me achieve early career success. Some key advice around leveraging the internship experience as a foot in the door, communicating complex topics in an understandable way, framing diverse experiences in a manner that aligns with business goals, and navigating the recruitment process helped.... In term of achieving success, advice such as underpromising but overdelivering, meeting with as many people one on one as I can, finding a mentor, building advocates, and staying connected with recent research all helped/are helping me a great deal.

— 2017 Doctoral Consortium Participant **Dante Myers**

The Junior Faculty Consortium helped me to connect with other assistant professors and also well-established faculty to learn more about how to be successful in the tenure process and beyond. I would recommend the experience to junior faculty both from a networking perspective and from a professional development perspective.

— 2017 Junior Faculty Consortium Participant **Katina Sawyer**

The Junior Faculty Consortium represented, to me, a unique opportunity to connect with other individuals who were in a similar career stage as me in a nonthreatening, fun, and mostly informative environment. I really got a lot out of it and I'm glad that I went! If you are considering going ... I'd encourage you to give it a shot!

— 2017 Junior Faculty Consortium Participant **Jay Hardy**

The Early Career Practitioner Consortium was fantastic! I had a really great day. I enjoyed hearing about different options for an I-O practitioner career. Now I'm really optimistic in terms of what my career can be, and I'm really happy to have met some people through networking who can help me get there!

— 2017 Junior Faculty Consortium Participant **Emily Pelosi**

Consortia occur the day before the SIOP conference, so plan now!

Participants must register prior to the conference and a fee is associated with each Consortium. Application to the Masters Consortium, Doctoral Consortium, and Early Career Practitioner Consortium (ECPC) is through nomination process (details are forthcoming!). The Junior Faculty Consortium does not require nominations so applicants may choose to attend when registering for the conference.

Seating is limited across all consortia programs, so be sure to register early! For more information about these programs, please contact the Consortia Committee members listed below.

See you in Chicago!!

Wendy Bedwell (paceconsultingsolutionsllc@gmail.com), Consortia Chair

Doctoral Consortium Chair: **Jenna Shapiro** (jennacshapiro@gmail.com)

Master's Consortium Chair: **Katherine Sliter** (katherinesliter@gmail.com)

Early Career Practitioner Consortium Chair: **Vince Conte** (vc746@nyu.edu)

Junior Faculty Consortium Chair: **Tyree Mitchell** (tyreemitchell@lsu.edu)

SIOP@APS 2018—Updates on the Boston Program

Margaret Beier
Rice University

Harrison J. Kell
Educational Testing Service

Christopher Wiese
Purdue University

Please join the group of amazing scientists sharing their work at the Association for Psychological Science (APS) convention in San Francisco! The **2018 APS Annual Convention will be held May 24-27 at the Hilton San Francisco Union Square Hotel.**

Although the symposium deadline has passed, there is still time to submit your poster by January 31, 2017 (<https://www.psychologicalscience.org/conventions/annual/submit>). Poster acceptances are communicated on a rolling basis. The sooner you submit your work, the sooner you'll know if it is accepted for presentation!

In addition to an exciting APS general program (<https://www.psychologicalscience.org/conventions/annual/program-2>) and informative workshops (see the APS website for the list of topics), the I-O featured speakers are as follows:

- Symposium: Teams and Teamwork
 - **Suzanne Bell** (DePaul University)
 - **Shawn Burke** (University of Central Florida)
 - **Dorothy Carter** (University of Georgia)
 - **Steve Kozlowski** (Michigan State University)
 - Daniel Newton (Arizona State University)
- Symposium: Technology and the Changing Nature of Work
 - **Tara Behrend** (George Washington University)
 - **Alexis Fink** (Intel)
 - **Richard Landers** (Old Dominion University)
 - Lionel Robert (University of Michigan)
- Invited Addresses:
 - **Nathan Carter** (University of Georgia)
 - **Michelle (Mikki) Hebl** (Rice University)
 - Ute-Christine Klehe (University of Giessen)

Convention attendees will also be invited to join us at the **I-O happy hour at APS**, which is a great place to make new connections and to get a drink on us! We look forward to seeing you in San Francisco!



Dr. Stanley M. Gully, a professor of human resource management at Penn State University, died unexpectedly on October 9, 2017, in State College, PA. He was 55 years old.

Stan was an outstanding industrial and organizational psychologist. Stan's research interests and contributions included work at the interface between training and individual differences. His main influence in this area was the development and testing of theoretical models that integrate personal and situational factors that promote different types of self-regulatory processes and learning. He also published influential work in the areas of leadership and team effectiveness, meta-analyses on cohesion and team efficacy, as well as general contributions to the quantitative research methods literature.

His refereed articles and chapters have been cited more than 4,900 times. He has coauthored multiple editions of textbooks on strategic staffing, organizational behavior, and human resource management, all of which have been well received. His publications include a range of articles in top journals such as *Personnel Psychology*, *Industrial and Organizational Psychology: Perspectives on Science and Practice*, *Journal of Organizational Behavior*, *Journal of Applied Psychology*, and *Organizational Behavior and Human Decision Processes*. In addition, he coauthored a series of staffing books for SHRM and coedited the Business Expert Press series, producing 12 volumes on topics such as managing expatriates, cross-cultural management, and managing employee turnover.

Stan received his bachelor's degree from San Diego State University and his MS and PhD in industrial-organizational psychology from Michigan State University. He was elected Fellow of the Society of Industrial and Organizational Psychology in 2014 and was ranked by the Academy of Management as one of the top 50 most influential scholars who received their degrees since 1991. Prior to joining the faculty in the School of Labor and Employment Relations at Penn State in 2014, Stan was a faculty member at Rutgers University (1998–2014) and George Mason University (1996–1998).

As outstanding of a professional career that he had, Stan was an even better person. He enlivened every room that he entered and was always quick to offer kind words, well-timed humor, and a deep sense of compassion and concern. His impact on his family, friends, colleagues, and students will continue to be deep and profound. The world is lessened with Stan's untimely passing, and we should all feel challenged to bring just a fraction of the light to others that he brought in his time with us.

Ronald S. Landis
Illinois Institute of Technology

Jose M. Cortina
Virginia Commonwealth University

Membership Milestones

Jayne Tegge, Membership Services Specialist; and Stephany Below, Communications Manager

The Membership Milestones column is devoted to welcoming the newest SIOP members and recognizing long-time members. Each column lists the professional SIOP members who have joined the Society since the previous issue as well as recognizes members who have recently upgraded their membership. We also acknowledge the newest additions to SIOP's Sterling Circle. Click the links below to go directly to a list or continue reading to learn more!



Members are the heart and soul of SIOP and are greatly appreciated for their interest and contributions. An impressive list of distinguished members has been with the Society for 25 years or more. To recognize the contributions and loyalty of

these dedicated members, SIOP has developed an initiative called the Sterling Circle. Sterling Circle members are honored in several ways and can be identified at SIOP events with a special ribbon on their badges. Learn more about the Sterling Circle [here](#).

Following is a list of SIOP's newest Sterling Circle Members.* See the complete list on the [SIOP website](#)!

Shawn Burke
Ronald Festa

Raymond Johnson
Tenora Grigsby

Patricia Hedberg
Valentine Arnold

M. Susan Taylor

New Members

The life blood of any organization lies in attracting new members who bring a special enthusiasm and interest. Membership in SIOP is growing, and we take great pleasure in welcoming our newest members. They comprise a wonderful mix of former Student Affiliates upgrading to full membership and professionals, including those who previously were Associate members and International Affiliates. SIOP looks forward to these new members' participation on committees and conferences as they experience the value of membership in the premier organization for industrial and organizational psychologists.

Following is a list of SIOP's newest professional members*:

Gregory Adams	Steven Culpepper	Anthony	Kyung-Hee Lee
Alexander Aguilar	Ayanna Cummings	Hemmelgarn	Meredith Lepley
Trinidad Argüelles	Lonzo Davis	Casto Ignacio	Mary Manoogian
Cara Bauer	Christina DeSalvo	Kruthika	AJ Marsden
Scott Bible	Katrina Dougan	Jayatheertha	Anders Marstand
Jacqueline Bichsel	Patricia Duncan	Feng Jiang	Tracy Maylett
Angela Bruch	Cathleen Dunn	Dustin Johnson	Katharine McMillan
Ashley Cannon	Mary Fairchild	Sadaf Kazi	Igor Menezes
Swati Chandra	Celine Foord	Nina Keith	Katrina Merlini
Karrie Chitwood	Philip Gibson	Min-soo Kim	Eva Mika
Wonseok Choi	Jaron Harvey	Andrew Knight	Chandra Miller
Donald Choi	Joseph Hasenstein	Daniel Kuchinka	Amy Motyka
Rachel Clapp-Smith	Elizabeth Hawley	Guylaine Landry	Ranjit Nair
Rayna Clifton Gale	Brittany Head	Virginia Laney	Ann Nakamura

Megan Orchard	Jamie Poveromo	Kenneth Scott	Petro Vlasov
Michael Palanski	Isabel Raemdonck	Ryan Smith	Dan Vosgerichian
Neelima Paranjpey	Beau River	Kathryn Stanley	Kevin Williams
Haesang Park	Shannon Ross	Yoshi Takahashi	Alethea Wright
Brad Pearce	David Rusbasan	Craig Talmage	Christine Y
Paraskevas Petrou	Israel Sánchez-	Katherine Tsai	
Chris Pollino	Cardona	Merel Van Dijk	
Meagan Poole	Niclas Schaper	Damian Vaughn	

New “Associate Path to Membership” Member*: Jessica Merten



As for SIOP, I go back to the time when SIOP was Division 14 of APA. My association as a member and later a Fellow has been continuous since circa 1970. Having served as a member and chair of committees like Program, Fellowship and Training and for an edition of the *Personnel Selection Principles*, I was the beneficiary of the values and wisdom of SIOP colleagues, which fostered my scientific and professional growth, not to mention my competency as a manager and administrator. I must mention by name **Ray Katzell, Herb Meyer, Joe Weitz, Irv Goldstein, Ben Schneider, Wally Borman, Frank Landy, Rich Klimoski, Wayne Cascio, Milt and Lee Hakel, Frank Schmidt, and Neal Schmitt** as SIOP mentors and role models. SIOP has provided a forum for the presentation, criticism and discussion of my and my students' research over many years. SIOP conferences have been instrumental in providing me with much content for lifelong learning. SIOP has truly been a key element in any success I have enjoyed as an I-O psychologist.

Edward Levine
SIOP Fellow since 1989, Sterling Circle Member



Being an active SIOP member is a strong professional value that was instilled in me as a graduate student. In a real way, SIOP helped raise me as a professional. Reading *TIP*, attending the doctoral consortium, presenting at annual conferences, and networking with luminaries in the field were essential developmental opportunities that SIOP membership offered. The generosity of SIOP members with their time and encouragement early in my career connected me to the I-O science and practice community, established SIOP as my professional home, and inspired me to give back. I've enjoyed sharing SIOP with my own students, who have benefitted in innumerable ways. Among professional organizations, SIOP stands out as something special. In SIOP, there is a common thread of dedication connecting generations of I-Os. We have remarkably talented members who work tirelessly to develop I-O psychologists and to promote the field of I-O psychology.

Debbie Major
SIOP Fellow since 2012, Sterling Circle Member

*List compiled from September 1 to December 15, 2017

IOTAs

David L. Tomczak
George Washington University

Honors and Awards

Jennifer Bott was honored as a Woman of Influence by the Indiana Business Journal.

Ronald Riggio published *Introduction to Industrial/Organizational Psychology* (7th ed.).

Transitions, New Affiliations, Appointments

Min Cheong joined the faculty at Penn State Great Valley this fall.

Rick Jacobs was appointed to SVP of Advisory Services during PSI's acquisition of EB Jacobs.

Mark Ehrhart and **Steve Jex** joined the Department of Psychology at the University of Central Florida.

Lisa Harpe has joined DCI Consulting Group Inc. as a principal consultant.

William J. Huffaker was appointed to Vice President of Inclusion & Diversity, and Talent Global Human Resources at SC Johnson.

Nicole Petersen and **Chantale Wilson Antonik** have joined the Design Build team at Shaker.

Jeff T. H. Pon was appointed as director of the Office of Personnel Management (OPM).

Garnett S. Stokes was appointed to president of the University of New Mexico, the first female president in the university's 128-year history.

Isaac Thompson has joined Shaker as a principal data scientist.

Lynda Zugec was appointed to be the Canadian Society for Industrial and Organizational Psychology (CSIOP) Delegate to the Alliance for Organizational Psychology (AOP).

Good luck and congratulations! Keep your colleagues at SIOP up to date. Send items for IOTAs to **Tara Behrend** at behrend@gwu.edu.